12

CUK-H03895-12-0162728

XVII

1833

CONTENTS OF THE 17th VOLUME.

I. Page

Statistical Report on the Bhotia Mehals of Kumaon. By George William Traill, Esq. 1

II.

An Essay on the Extraction of the Roots of Integers, as practised by the Arabs. By John Tytler, ... 51

III.

Sketch of the Religious Sects of the Hindus. By Horace Hayman Wilson, Esq. ... 169

IV.

Memoir of a Survey of Asam and the Neighbouring Countries, executed in 1825-6-7-8. By Lieutenant R. Wilcox, ... 314

V.

Census of the Population of the City of Benares. By James Prinsep, Esq. 470

VI.

Journey across the Pandua Hills, near Silhet, in Bengal. By H. Walters, Esq. ... 499

VII.

Route from Cathmandu, in Nepal, to Tāzedō, on the Chinese Frontier, with some occasional allusions to the Manners and Customs of the Bhotiahs, by Amir, a Cashmiro-Bhotiah by birth, and by vocation an Interpreter to the Traders on the Route described. Communicated by B. H. Hodgson, Esq. 513

VIII. P

Census of the City of Dacca. By H[illegible]y Walters, Esq. .....

IX.

Description of Select Coins, from Origin[illegible] or Drawings in the possession of the Asiatic Society. By H. H. Wilso[illegible] Esq. .....

X.

Remarks on the portion of the Dionysiac of Nonnus relating to the Indians. By H. H. Wilson, Esq. .....

162,728

LIST OF PLATES.

Map of Asam and the Neighbouring Countries, to face page.....
Section of the Pandua Hills, ...
View in the Káya Hills,.....
Sketch of the Bhúbán Cave, ...
Ancient Coins, five Plates, at the conclusion of the description of them,.....

RESOLUTION

PASSED AT A MEETING OF

THE ASIATIC SOCIETY

Held on Wednesday, the 9th January, 1833.

THE HONORABLE SIR EDWARD RYAN, PRESIDENT, IN THE CHAIR.

RESOLVED, that the following extract from the Proceedings of this Society, containing the Address presented to Mr. H. H. WILSON by the Society, on the occasion of his departure from India, and his reply, be printed to accompany the Seventeenth Volume of Researches, just published under his superintendence.

EXTRACT FROM THE PROCEEDINGS OF THE ASIATIC SOCIETY.

"In pursuance of the Resolution passed at a Special Meeting on the 19th December, the Deputation of the Society, consisting of the President, and the Vice Presidents; the Reverend Doctor Mill, Principal of Bishop's College, Doctor John Tytler, Superintendent of Arabic translations, &c. and Captain Troyer, Secretary of the Sanskrit College, accompanied by most of the Members, proceeded in a body to the residence of Mr. WILSON on the 31st, where, after the usual ceremonials of courtesy, the President, The Honorable SIR EDWARD RYAN, read the following Address, which had been prepared by the Committee nominated at the Special Meeting."

ADDRESS.

THE ASIATIC SOCIETY TO H. H. WILSON, ESQ. THEIR SECRETARY.

When other Societies in this Presidency, which, either in science or the lighter walks of literature, have shared the benefit of your counsel and assistance, are now anxious

to associate their expressions of gratitude and regret with your approaching departure from India, it would ill become that one with which your connection is the oldest and most important of all, to suffer the most distinguished of its Members to leave these shores, without giving some public utterance to the sentiments which must on such an occasion animate every individual Member.

From the time, now nearly 50 years since, when the ASIATIC SOCIETY was instituted, "for inquiring into the History and Antiquities, the Arts, Sciences, and Literature of Asia,"—none, Sir, has with greater assiduity, or more splendid success, contributed to the advancement of that object, than yourself. In more than one department of their varied inquiries, your services are eminently conspicuous: but in that one, which must on every account claim precedence among the subjects of this Society's research, they are pre-eminent and unrivalled.

The ancient learning of India, which from the days of Pythagoras downward, had been the object of distant admiration, but never of clear definite knowledge, to the whole of civilized Europe, had indeed, at the period of your first arrival here, begun to emerge from the obscurity which had for ages encompassed it. The labours, as we are proud to declare, of some of the earliest Members of the Society, had led the way in unlocking the sacred treasures of Brahmanical literature: through the ardent inquiring mind of our illustrious Founder and President, partly preceded, partly accompanied and followed, by the profound erudition of COLEBROOKE, the philological diligence of WILKINS, and some others, specimens of Indian genius and science had been given to the world in an *English* dress: and the matchless language in which all these treasures were contained, unknown before and unstudied by Europeans, (if we except a few who keeping it from all others would have made it an instrument of their own interested views,) was now partially exhibited to the more inquiring of the students of the West. But fully to throw open this remote and difficult walk of learned research, to make what was hitherto necessarily confined to a few amongst ourselves intimately conversant with the Pandits of India, accessible in some degree to others destitute of this advantage; to render the study of Sanscrit, as that of Arabic and Persian had long been, possible, if not easy to persons confined to the libraries of Europe; and thus create that general diffusion of the study which, already reaching beyond our countrymen, is stimulating to exertion the laborious students of France and Germany;—this, Sir, is a merit, which belongs, above every other individual, to you.

For the grounds of this judgment, we need point only to your Sanscrit and English Dictionary: a work, which, while facilitating and accelerating the progress of all subsequent students, can hardly be appreciated justly by any who has not some experience of this gigantic species of labour; a labour so immense, that even when applied to the long-studied classical idioms of Greece and Rome, it has been characterized by one of the most eminent restorers of learning as comprising within itself alone every variety of literary toil. In the present instance, when we consider the multifarious sources from which the compilation is to be made (none of which, with one brilliant exception, had been before subjected to the severer accuracy of European criticism),—the boundless extent of the language itself,—the quantity of research often necessary for ascertaining the precise import of even innumerable words among the thousands here enumerated and explained;—this work, no doubt in its arrangement, its interpretation and etymologies, must ever be regarded as a magnificent monument of philological skill and industry. The edition of 1819, setting aside the consideration of those additions just now published, with which your subsequent labors have nearly doubled its value,—the first edition alone would amply deserve this character. Under any circumstances, it would be an excellent and valuable Sanscrit lexicon:—considered as the *first* in any European language, it is admirable, and beyond all ordinary praise.

But we feel, Sir, that it would be unjust to your high merits in this department of learning, were we to dwell too much on this one production, great as it is, indeed pre-eminently valuable in its kind, and sufficient of itself to establish the reputation of any oriental scholar. The several translations of classical Indian compositions, which, before and after the publication of your great work, you have given to the world, have shown how well you could yourself tread those remote and arduous paths of literature which your labours had made free to the approach of others: they have added to the character of deep recondite erudition, the more desirable, if less distinguished, praise of a highly cultivated mind, and poetic taste and feeling. These qualities, not common in their separate excellence, but in their union truly extraordinary, are visible in your first published work, the version of the Cloud-Messenger of CALIDASA, as well as in what is among the latest, your selections of the Dramatic Literature of the Hindús: and while the Sanscrit scholar wonders at the graceful ease and delicacy with which the peculiar character of Indian composition is most faithfully represented to English readers, the English general reader —he at least who has taste to discern the forms of beauty in the most unwonted combina-

tions, and the philosophy to sympathize with man, however diversified by climate and institutions,—cannot fail to be both delighted and instructed with the perusal.

It were really impossible to particularize in this Address, the many elegant and useful editions of Sanscrit works that you have prepared, or the still more numerous dissertations on Hindú literature and antiquities, on the religious sects of this Peninsula, and other kindred subjects, with which your indefatigable research has enriched the memoirs of this Society, as well as some other literary repositories of India and England. One of these, however, which heads the 15th volume of our own Transactions, is of too important a nature to be passed over without distinct mention. In the intricate labyrinth of Indian history and chronology, where the erudite labours of JONES, of HAMILTON, and of WILFORD, seemed only to render the darkness visible, and the confusion more hopelessly inextricable, furnishing too just ground for the idea that, in India, mythology and pantheistic mysticism had swallowed up history altogether,—you have discovered one point at least, where order could be educed from the chaos of existing materials; where conclusions satisfactory to sound historical criticism could be attained, from which, as way-marks, the future investigator might safely proceed in exploring what is elsewhere most doubtful in this vast undiscovered region of Asiatic antiquity. That this is a correct judgment of your "Essay on the Hindú History of Cashmír," the voice of continental critics, some of them most conversant with the philology of Central Asia, will unite with ours in attesting. And, after the casual mention of one eminent deceased scholar of this Society, whose life was spent in scanning the contents of the Mahábhárata and Puránas, and comparing them, often hastily and fancifully, with the results of an uncommonly extensive and recondite western reading we cannot fail to notice the far more useful as well as more critical, labour, which you have bestowed on those huge treasures of Hindú mythology and tradition. Of the first and most classical of these poems you are about to give a splendid Sanscrit edition to the public. But your analysis of the contents of this, of the 18 Puránas, and several Upapurána, with translations interpersed of the most curious and interesting portions of each, s a work of which the literary merit, and importance to all future inquirers into Hindú fable or history, can scarcely be estimated too highly. It is indeed unpublished: but the twenty folio manuscript volumes containing it, hold a most distinguished place among the many valuable gifts for which the library of this Society is indebted to you. We cannot but indulge the hope, that the older and far more difficult monuments of Hindú antiquity, the Védas, may hereafter receive that illustration

from you which no other scholar, with the exception perhaps of Mr. COLEBROOKE, is fully competent to afford them.

Hitherto it is in reference to Sanscrit studies only, or the dialects immediately connected with it, that we have considered your unrivalled claims to our gratitude, and that of the literary world: but it will not have escaped the attention of any one acquainted with the works alluded to, the History of Cashmír especially, how well you have availed yourself of the collateral assistance, which the accurate knowledge of *other* Eastern languages has supplied. In the great work which you gratuitously undertook of arranging and describing the very large unformed collections of that indefatigable traveller and antiquary, the late Colonel COLIN MACKENZIE, you had to apply that knowledge to a variety of interesting objects *separately*. And, in the full description of the result of this six years' labour, which you published in Calcutta in two octavo volumes in 1828, a work in which Sanscrit books and monuments hold the chief, but by no means the only place, every reader must admire the happy critical attention which your active mind could bestow on so many objects, each sufficient to engross the attention of an ordinary scholar, collected from such various quarters, and comprised in so many difficult languages.

It cannot but enhance greatly the admiration with which we view these illustrious contributions to the stock of Asiatic learning, when we consider, that your time, from your first arrival in the country, has been occupied in official duties of an important and difficult character, totally unconnected with literature; and that the severe scientific studies of your own profession also (in which your merits have been recently acknowledged by those most competent to estimate them) have not, amidst this double distraction, been neglected. Nor can we but be greatly struck with the fact, that amidst occupations so various, so arduous, and so honourable, you could undertake the province (which inferior minds might have been delegated to perform, though they could not have performed so well,) of preparing elementary works in English for the instruction of Hindú youth, and even devoting a large portion of your time to the active superintendence of their yet infant seminaries of education. Still more, when we find that, from a complication of employments sufficient to distract or overwhelm the mass even of clever men, your mind could not only unbend itself in the lighter departments of elegant literature and art, but find ease and diversion in the hardness of statistical inquiries, and the details of recent political history. Your work on the Commerce of Bengal, lately published,

and your History of the Burmese War, must remain signal monuments of the rare vigour of your enlightened and accomplished understanding.

But we must return finally to your relation to the Asiatic Society, and that not merely as a member, and unequalled c[illegible] [illegible] Secretary. From the time when you succeeded the la[illegible] important capacity in 1810, not only have your main services be[illegible] with the progress of [illegible] learning, and conspicuous to the whole lite[illegible] [illegible] of which we alone are witnesses, and [illegible] the preparation of the [illegible] a useful index of the whole, the conduct of all the details of the Society [illegible] and devotion to our interests has been most constant and exemplary. Nor must we omit to mention the masterly manner in which you have conducted the extensive correspondence, domestic and foreign, of this Society; nor the characteristic amenity of manners with which you have been ever ready to assist with your valuable aid and counsel the President and other individual members. None, after SIR W. JONES, if even he is to be excepted, has stronger claims on our grateful recollection; none certainly more long continued ones. During the last 23 years, you have never quitted your place amongst us, except only that year (1820), when you were absent on Government duty at Benares—an absence which, while it enabled you to fulfil more perfectly many of your learned undertakings, could not fail to reflect the greater honour on the Society.

For these eminent and unequalled services, we feel that the best thanks we can offer are but an insignificant recompense. We can only add to this tribute of mere justice to your past merits, our warmest hopes and wishes for the future, that you may fill, with increased honour and happiness, the distinguished station which a munificent founder has established in one of our ancient universities. We trust that you may succeed in awaking in many of the British youth, destined to important stations here, a desire to acquire that knowledge of the Sanscrit language and literature by which you are yourself so immortally distinguished, and thus become the means of extending to this land the blessings of increased civilization and Christianity.

But one wish remains for ourselves. We wish not to be without some durable monument of the great talents which have, for nearly a quarter of century, given strength, and

activity, and honour to our meetings in this place. We therefore request, that you will add to your former favours this one, of permitting your bust to be taken by the most eminent sculptor in England, at the charge of this Society: that it may stand in our room as an enduring testimony of the high esteem and respect with which your memory will be [illegible] Asiatic [illegible]

EDWARD RYAN, *President.*

[illegible] December 31st, 1832

At the conclusion of the Address, Mr. WILSON, having requested the President and [illegible] to be seated, replied in the following terms:

"When I recollect, that Mr. COLEBROOKE, on leaving India, received, from the Asiatic Society, of which he had for many years been the chief ornament and support, no other tribute than an official letter from myself, the tenor of which was left very much to my own discretion, I cannot but feel ashamed of the vastly inferior claims which have been this day honoured by you with such highly favourable notice. If he received less, I have reaped more than I am entitled to, and I have to thank you not only for the commendations which I might in fairness claim, but for your kindness and partiality, the not unnatural growth of many years of association, which have suggested this overflowing measure of reward for any service I may have rendered to the Society.

I shall not pretend to disclaim the warm interest which I have taken in the credit and prosperity of the Asiatic Society, from the period of my first arrival in this country, or in the researches which it was instituted to promote. After I became a Member, the Secretary of the Society, to do so was no more than my duty, but it was equally my pleasure and pride to be a member of a body established for such honourable and useful purposes, as the investigation of man and nature in the East, the development of the past history and present condition of these vast and important regions, and the maintenance of the British character for enlightened and liberal research, and the disinterested cultivation of intellectual pursuits. The share that I may have borne in the accomplishment of these purposes has made many hours of my leisure in this country glide happily away; to have been associated in them with so many excellent and talented individuals has always been, and must always be, a subject of self-congratulation; to have earned such an estimation

amongst them, as they have this day expressed, must ever be a source of proud and grateful recollection.

In consenting to the request with which you have been pleased to conclude the flattering enumeration which you have made of my services to Oriental Literature and to the Society, you will acquit me of being influenced by merely personal feeling. If I can judge of your sentiments by my own, I can fully appreciate the motives which induce you to seek to preserve memorials of those who have taken an active part in the labours of the Society. One of the most interesting decorations of the room in which we are accustomed to assemble is to me, to all, the portrait of our illustrious founder;—and I am sure you will agree with me, that the apartment would possess a still dearer interest were such decorations multiplied;—did the countenances of COLEBROOKE, WILFORD, WILKINS, and other distinguished members look down complacently upon the labours of their successors. I need not add, how irresistible are such influences upon the human mind, and how well calculated are such memorials to give wholesome stimulus to youthful energies. It is not from a merely selfish motive, therefore, that I accede to your request, but in the hope, that even in this way I may contribute, however feebly, to the great ends of our Institution. At the same time I am not insensible of the kindness which has prompted the proposal, and if I do feel vain, it is that you should have thought me worthy of the honour of being perpetually, as far as any thing human is perpetual, present amongst you.

Gentlemen, I have only further to bid you farewell, and offer you my most fervent hopes for the continued activity of the Asiatic Society, confident, that that alone is necessary to insure it continued and increasing utility and reputation."

I.

STATISTICAL REPORT

ON THE

BHOTIA MEHALS

OF

KAMAON.

By GEORGE WILLIAM TRAILL, Esq.

Commissioner for the affairs of Kamaon.

The name of *Bhot* is here, properly speaking, applicable only to the Himalaya ranges, which once formed a part of the adjacent *Tibet* province of *Bhot*. Since the annexation of that tract to the states of *Kamaon* and *Gahrwal*, a portion of the neighbouring Pergunna has been incorporated with the several *Bhot* Mehals. These villages have mostly continued in the occupation of the Hindu proprietors, and as they offer no peculiarities in regard to produce or management, no further notice of them will be taken in the present report, which will, consequently, refer solely to *Bhot* in its restricted sense.

The northern boundary, as recognized by the Tibet Government, extends to the commencement of the Table Land: for the southern boundary the opposite base of the *Himalaya* range may be assigned. With these limits, *Bhot* may be estimated as forming one-third of the

 province.

province. The southern line of demarcation is, by no means, continued or well defined, intervals between the snowy peak presenting themselves in the neighbourhood of the principal rivers; the most considerable of these occurs at the foot of the *Niti* Pass, where the line of perpetual snow recedes full a quarter of a degree to the north.

At the intervals in question, are found the mouths of the Tartar Passes, five in number, and commencing from the west, as follows:—

Mana, on the *Saraswati*, ...	Branches of the *Ganges*.
Niti, on the *Duli*, ...	
Juwar, on the *Gauri*, ...	Branches of the *Sarda* or *Gogra*.
Darma, on the *Dhouli*, ...	
Byanse, on the *Káli*, ...	

The productive and habitable portion of *Bhot*, is confined to the passes and their immediate neighbourhood, and does not exceed a sixteenth of its total extent; the remainder consists of snow or barren rocks.

The minimum elevation in the several passes may be taken at six thousand feet above the sea, while at their crests, the height varies from above twenty thousand feet on *Mana*, to about fifteen thousand feet on *Byanse*. The altitudes of the peaks, have been calculated by Captain Webb: the maximum appears to be above twenty-five thousand feet.*

The

NOTE.—The height of the Peak Nanda Devi, is, by Captain Webb's operations, 25,669 feet.
Ditto ditto, by Major Hodgson and Captain Herbert, 25,749 ditto.
Mean height 25,709.

The paths to the passes, continue along the upper part of the rivers abovementioned, till near the crest of the ridge, which is crossed in those parts offering least difficulty in the ascent, and it is here only that snow is not met with during the season of intercourse. Roads of communication through the *Himalaya* unite the passes from east to west, but these are passable, during a few days only in each year, and are considered at all times as dangerous by the *Bhotias* themselves. Roads of this description formerly used, are now impracticable, owing to the increase of snow. The interior of the *Himalaya*, except at the passes and paths in question, is inaccessible, and appears to be daily becoming more so from the gradual extension of the zone of perpetual snow. The *Bhotias* bear universal testimony to the fact of such extension, and point out ridges now never free from snow, which, within the memory of man, were clothed with forest, and afforded periodical pastures for sheep: they even state, that the avalanches, detached from the lofty peaks, occasionally present pieces of wood frozen in their centre.

The roads in the passes are carried as near as possible to the margin of the river, and only deviate from thence as a last resource, where a rocky precipice, impassable by other means, presents itself. Obstructions of this nature, which are here frequent, are, if feasible, avoided by means of bridges: as they are surmounted by the aid of a scaffolding formed of spars, and supported by joists, fastened horizontally in the face of the rock, this expedient is only pursued where natural crevices or ledges are available. Where a passage over the obstruction is inevitable, a considerable detour is usually necessary for that purpose, and the road, in these cases, is always difficult, and sometimes attended with danger.

The bridges are of the *Sanga* kind, and being intended for the passage of laden animals, they are made with greater attention and better materials,

materials, than are commonly given by the Zemindars of other parts of the province, to such erections. In the early part of the season, natural bridges of snow, formed from the accumulation of avalanches, abound, more particularly in the upper part of the Ghats, where the stream is invisible during much of its course.

The frequency of mountain slips, "Paira," renders the preservation of the road an object of constant toil to the Bhotias. By accidents of this nature, the course of the river is sometimes completely blocked up for two or three successive days, and every part of the path way, within its reach, is swept away by the accumulated torrent, not an atom of soil being left on which to found a new road; on forming the latter, a deviation from the old line and level, becomes necessary in consequence.

The passes, taking their whole extent, may be said to be barely practicable. The Bhotias travel through them without difficulty under burthens, but natives of other quarters of the hills are compelled, in many places, to proceed with the utmost caution, even without loads; at such points animals of every description require the assistance of manual labor; the larger kinds, such as poneys and cattle, are raised or lowered, according to the nature of the obstruction, by means of slings passed round their bodies.

Comparatively speaking, the *Niti* is considered as the best, the *Juwar* as the most difficult pass in this province. A tradition is here current, that when *Bhot* was originally conquered by the *Kamaon* power, a road was formed by the invading army to facilitate its progress through the Ghat; this operation, the commander (Raja Baz Bahader Chand) is said to have personally superintended, paying a rupee with his own hand, for every cup full of earth brought to the spot. This tale doubtless partakes of the usual style of Eastern hyperbole, but it is

deprived

deprived of much of its apparent exaggeration, on inspection of the country in that quarter. During the rainy season, to insecurity under foot, must be added insecurity over head. Fragments of rock, "*Gull*," and avalanches, "*Húin Gull*," are continually detached from the impending cliffs, and annually occasion fatal accidents in each of the Ghats.

The *Bhot* Mehals present only fifty-nine villages, within the Ghats, distributed as under-mentioned; comparatively speaking, these are of good size. The village of *Melím*, alone (in the *Juwar* pass,) contains near two hundred houses, a number greater than is to be found in any other village in the province.

	No. of Villages.	No. of Houses.
Mana,	3	125
Níti,	10	219
Juwar,	13	455
Darma,	24	342
Byanse,	9——59	184——1325

The houses are commonly large, consisting of two or more stories, substantially built of stone, with sloping roofs of slate, planks, or gravel beat smooth; where this last material is made use of, a previous layer of birch-bark, is requisite to render the roof water-proof. In the choice of a site for building, security from avalanches forms the primary consideration; but even the greatest foresight sometimes proves vain. In 1822, more than twenty houses were swept away by an avalanche in the village of *Mana;* although it is, at least, two miles distant from the peak, whence the destructive mass must have proceeded. This catastrophe took place, fortunately, during the periodical absence of the inhabitants.

No complete enumeration has been made of the population in *Bhot*, but sufficient data exist for computing the average of residents in each house to exceed seven. The *Bhotias* are, generally, in good circumstances, and many individuals possess one or more slaves or domestics, who, with their families, live under the same roof with their masters. This estimate will give a total of near ten thousand inhabitants, of whom, probably, nine-tenths are *Bhotias*, and one-tenth natives of other parts, chiefly artificers of low caste. The *Bhotias*, who resid [illegible] lages, at the mouth of the *Ghat* and not i[illegible], may be estimated at about five hundred. Prejudices m[illegible] joined to the jealousy of the *Bhotias* for their commercial monopoly, prevent the permanent establishment of *Hindus* within the *Ghats*; by the latter cause also, further emigrations from *Tibet* are impeded.

The following brief view of the climate must be understood as solely applicable to the habitable parts; the state of temperature in the elevated portion contiguous to, or within the zone of perpetual congelation, will only be cursorily noticed, as influencing the productions of the soil.

In the absence of a regular series of observations, general remarks only can be offered. During full half the year, the surface is wholly covered with snow; this begins to be about the end of September, and continues to accumulate to the beginning of April. Thaw then becomes predominant, though partial falls occur till even late in May. In open and level situations, unaffected by drifts or avalanches, the bed of snow which, at its maximum depth, varies in different years, from six to twelve feet, is wholly dissipated by the first week in June; in ravines and hollows, it does not entirely disappear before the middle of July. The seasons of spring, summer, and autumn, are comprised within five months, from

from May to September inclusive; but an interval of four months, without a fall of snow, is rare. During these seasons, the thermometer (Fahrenheit,) at sun-rise ranges from 40° to 55°, and at mid-day, from 65° to 75° in the shade, and from 90° to 110° in the sun.

Towards the middle of August, the temperature becomes precarious, and liable to sudden changes, consequent on the state of weather which may prevail on the surrounding heights; falls of snow, in that quarter, producing slight frosts in the neighbouring valleys: by such occurrences the ripening crops are sometimes wholly burnt up. The *Bhotias* firmly believe that falls of snow may be induced by concussions in the air. The use of fire arms, musical instruments, and, in *Darma*, even the scrubbing of metal vessels, are prohibited in the neighbourhood of villages.

Rain is here neither heavy nor frequent; there is, however, a constant succession of dense clouds and mists.

The soil is commonly black, and contains much decayed vegetable matter washed down by the melted snows; it would however appear to require large supplies of manure to render it productive. The surface is every where extremely stony.

After the preceding notice of the climate, it is almost superfluous to mention, that only one crop is obtained in each year, the agricultural products are "*Phapar*" and "*Ugal*," two varieties of buck-wheat, "*Uä Jaö*" and "*Jao*," beardless and common barley. Wheat and "*Marsa*," a species of amaranthus, are partially cultivated. In the richest and best watered lands, barley yields a return of from twenty to forty fold, according as the temperature may be affected by the proximity

proximity of snow. In the poor lands, which may not be capable of irrigation, from three to six for one, is the average produce. The "*Phapar*," which does not require irrigation, gives from thirty to forty fold.

Both wheat and "*Marsa*" are uncertain, the crop in many seasons never reaching maturity, and in the most [illegible] abundant. "*Phapar*" would appear to be [illegible] wild on all high mountains.

The operations and implements of hu[illegible]ities: the ploughing commences as early as [illegible] will admit, and the sowing is commonly completed by the first week in June. By the middle of September, the crop is ready for the sickle: to this period the irrigation of the wheat and barley is continued, the streams of melted snow being directed for that purpose, whenever available. Severe winters, attended with heavy snows, prove more or less injurious in their consequences to the succeeding crops. The *Bhot* villages are all situated on the northern side of the great chain of *Himalaya* Peaks, and are all, in some degree, subject to the influence of its snows and of its shade. By any unusual accumulation of snow on the summit, the inferior bed is forced down, and with it, the influence of, if not the line of perpetual congelation itself, descends: those villages which are contiguous to the peaks, and are unsheltered by intervening heights, suffer severely from such occurrences, as it sometimes requires the heat of more than one summer to throw back the snow to its former level. The village of *Laspa*, in the *Juwar* Ghat, has been rendered wholly unproductive during two years, by an incident of this kind. This village lies on the northern base of the great peak of *Nanda Devi*, but is the southernmost and least elevated within the Ghat: the peculiarities of its situation,

as

as the link of connection between *Hindustan* and *Tartary*, and the proximity of a still more sterile country in the latter, could alone induce cultivation in a tract where production is always precarious and never abundant.

Turnips and leaks are the only vegetables raised in *Bhot*, but many useful roots and herbs are spontaneously produced, among these are, the [illegible], frankincense *(Mari* or *Balchar) Laljari*, [illegible] objects of export to Hindustan. The rhubarb [illegible] its color and properties to the Turkey, and the [illegible] erdly, though they apply the powder to wounds and [illegible] as an ingredient in the formation of a red dye, in conjunction with *Manjith* and *Potash*. The *Manjith* is here extremely abundant; but, except for local consumption, is in no demand.

The indigenous fruits are gooseberries, currants, red and white, raspberries, strawberries, and pears, none of which receive culture. Apricots and peaches have been partially introduced by the *Bhotias*, but attain neither size or flavor. Walnuts and hazlenuts are common in the low grounds; the nut of the former contains little or no kernel, the latter is small, but well tasted.

The forests in the southern and least elevated parts of the Ghat, offer many varieties of tree common to other parts of the province: the most flourishing of these are the oaks and pines of different kinds. Specimens of the "*Deodar*," pine, and of the "*Suryi*," or Arbor Vitæ, with trunks of from twenty to twenty-five feet in circumference, are by no means uncommon.

With the increase of elevation, a gradual change in the composition of the forests takes place: to red Rhododendrons, *Deodars*, and

 oaks,

oaks, succeed the "*Raisalla*," or king pine, "*Thúners*," or Yew, "*Náspáti*,"* or white Rhododendron, and "*Bindhara*," or juniper, while above all is found the *Bhoj*, or birch, on the very verge of perpetual snow.

The bark of this latter is highly useful, as a substitute for paper, and for other domestic purposes, and is exported in considerable quantities to the plains. The sprigs of the "*Bindhara*," (juniper) and of the "*Suryi*," (Arbor Vitæ) are used in the preparation of yeast, "Balma." The most common shrubs are the "*Parpinja*," (ground cypress,) dog roses, red and white, and sweet briar.

Flowers are plentiful, more particularly the Iris and Anemone.

The domestic animals are horned cattle, ponies, sheep, goats, dogs, and cats.

The horned cattle are of three kinds. 1st. The common hill black cattle, of which a few are carried up for the supply of milk, and of agricultural labor. 2ndly. The "*Sára Gaí*," or Yak, imported from Tartary, chiefly for the purpose of carriage, for which it is well adapted by its strength: its employment is, however, restricted to the *Himalaya*, owing to its extreme susceptibility of heat and moisture. The third kind consists of mules, bred between the two foregoing species. Where the sire is a Yak, the produce is called "*Jabbu*," and in the opposite cross, it is called "*Garjo*." These breed freely together, or with the parent stock; but in the former case, the race degenerates: in the latter, the produce resumes the character of the parent, into which it may

* "Náspatí," so called from the leaf being used dry, and pounded as snuff.

may be re-bred. Of these mules, the "*Jabbu*" is the most valuable, being found to possess the good qualities of both parents in an essential degree. The value of the Yak and of the *Jabbu* is nearly the same—from fifteen to thirty rupees for each animal.

Sheep and goats are numerous, and form the principal means of transport; they are not, however, bred to any great extent by the *Bhotias*, but are purchased by them in the villages, along the south base of the *Himalaya*, the animals of that quarter alone, being found capable of standing the changes of climate and the unceasing labor to which their employment subjects them. The pasture on the ranges adjoining to the *Himalaya*, is found in a peculiar degree nutritive to sheep; on the melting of the winter snows, towards the end of March, these mountains which, though lofty, are by no means precipitous, become covered with verdure, and are then resorted to by the flocks of the neighbourhood. A few days are said to suffice to restore the animals to condition, though ever so much reduced by the fasts and rigors of the preceding winter. The grass of these pastures is distinguished by the shepherds, under a particular name, and has the universal reputation of being inexhaustible, the growth during the night being said to compensate fully for the consumption of the day. The flocks continue here till the commencement of the rains, when they are driven to less rich pastures on the more southern ridges; with the setting in of winter, they return to the villages. During this season, the sheep are compelled to browse with the goats; branches, chiefly of the oak, being cut down for them: the use of *Bhúsí* is here unknown, though the animals are turned into the stubble fields; neither is hay, though stored in small quantities for cattle, ever given to sheep. In some parts of *Garhwal*, the leaves of trees, particularly of the mulberry, are dried and stocked in autumn, to serve as fodder for the winter. The "*Kimmú*," or mulberry, is there, consequently, much valued, and the property

property in its foliage forms an object of sale and purchase, distinct from the land.

While on the mountains, the flocks are secured during the night in folds; these are situated along the ridges, and being intended for annual resort, are substantially built with layers of dry stone: the wall is raised to nine or ten feet, so as to exclude beasts of prey: only a single door of entrance is left, and that of the smallest dimensions, with the same view, as the leopards, when the door is high, break it down without difficulty, by leaping against it. In the interior, sloping *chhappers* are erected along one or more sides, according to the number of animals to be sheltered. Every village has commonly its separate fold at each of the periodical pastures; the ridges in question, consequently, exhibit the appearance of a chain of fortified posts, the resemblance being increased by the individual sites of these erections, which, with a view to facility of draining, are placed on the summits of rising grounds.

The wool is of good quality, and is wholly consumed on the spot, in the manufacture of blankets.

The sheep carries a burthen of from five to eight seers, and the goat from six to twelve seers: all dry commodities, the weight of which can be equally apportioned on both sides, may be conveyed on these animals. Grain, borax, salt, *gúr* and such articles, are sewn up in small saddle bags, called "*Karbik*," made of worsted, and cased with leather; these are laid across the back, and are secured merely by a crupper and a breast-band. Wool and other products of the same description, are formed into similar packages, and loaded in the same mode, but without bags. Laden sheep on short journeys, can accomplish seven or eight miles a day; but for a continuance, cannot keep up a greater rate than five miles; they travel only for a short

short time in the morning and in the evening, during the heat of the day, they are unloaded and suffered to graze. Goats are chosen, from their superior boldness and activity, as leaders of the flock, and are furnished with bells.

The common diseases of sheep, such as rot, mange, small-pox, &c. are all here prevalent, and in some years, extremely destructive; the goats are further liable, in wet weather, to a species of *Barsatí*, called "*Khúri*," which frequently terminates in the loss of the hoofs.

The casualties are further augmented by exposure and fatigue, by accidents, and by wild beasts; and as the females—even those with young at their feet—are not exempted from labor, it can be a matter of no surprise, that the *Bhotia* annually finds himself called on to make a fresh outlay for keeping up his stock. Many of the *Jowari Bhotias* possess flocks of Tibet sheep; this is a powerful long-legged animal, resembling the Iceland ram, and similarly subject to produce an additional number of horns, individuals being sometimes found with as many as five horns. This sheep carries from fifteen to twenty seers, its wool is also of a superior kind, known in commerce under the name of *Bayengi*, and the price is, at the same time, not greater than that of the common hill sheep; these considerations would lead to its exclusive introduction were it found capable of enduring the change of climate, but failure in this latter point, restricts its employment, as in the *Yak* to the Himalaya and its native country. These flocks are, in consequence, kept by their owners at some adjoining village in Tibet, and are brought into use on the opening of the upper part of the Ghat. The goats consumed for food and sacrifices, are also procured from Tibet; they are of the description which yields the shawl wool, and are to be purchased there at from twelve annas to two rupees each.

The horses in use here, are small stout ponies of Tartar breed, called "*Gúnts:*" these animals are remarkably sure-footed, and consequently, well adapted for the rocky and precipitous roads of the hills; they have the further merit of not requiring shoes, and are invariably ridden unshod. The price has, of late years, been much enhanced by the demand of European gentlemen; a poney of good qualifications not being procurable for less than from sixty to one hundred rupees, near treble the former rates.

Dogs are of two species, the Tibet, a large animal with a shaggy coat, kept for guarding sheep against the depredations of wild beasts: and, the Hill *Shikari*, or hunting dog, which does not differ in appearance from the common pariah dog of the plains, but is valuable from his qualifications for the chase. They are commonly used singly, or at most in pairs, and from their perseverance and goodness of nose, are generally successful in their pursuit of game. The deer, when raised, is driven by them down into the glen, where a part of the hunters lie in wait, armed with spears or matchlocks. The Bhotias are particularly fond of this sport, and pay comparatively large prices for dogs of good character. To improve the breed, they sometimes cross the *Shikari* dog with the "*Bowsa* or *Koya*," (wild dog) caught young and reared with that view This animal cannot be made available for hunting as it seizes indiscriminately on every animal, whether wild or domestic, which comes in view.

Dogs of the Tibet breed are subject to hydrophobia: the treatment employed by the Bhotias in cases of bites from animals in that state is simple, and said to be generally efficacious: the part bitten is immediately subjected to the operation of burning, either by *Guls*, or by a red hot iron, and a ligature is at the same time tied above the wound. For the space of fifteen days, the patient is debarred from the use of salt, spices, and heating food, and for the same period is daily magnetised by some skilful

skilful adept. The efficacy of the treatment depends on the actual cautery. The magnetism is not likely to be of much use. Of the success of this system of treatment, an instance fell under my own observation, in which not a shadow of doubt could exist of the rabidness of the animal by which the bite was inflicted.

The wild animals peculiar to *Bhot* are—

The "*Barji*," or tawny bear, said to be white in winter. This animal exceeds the common black species in size, and is carniverous. "*Bharel*," wild sheep, found only in the loftiest parts of the Himalaya, its size is that of the hill ram, color grey, with black points, hair thick and wiry, horns remarkably large and heavy, but curled as in the common ram. Vulgar fame represents this animal as falling, ultimately, a victim to the weight of his horns, being rendered thereby incapable of moving. "*Kastúrí*," musk deer, requires no description: it abounds along the base of the Himalaya, where it is in a great measure secured from the pursuit of hunters by the difficulties of the country; but for this circumstance, the value of its produce would, probably, have long since led to its extermination. The quantity and quality of the musk, are supposed to depend on the animal not being wounded, previous to the excision of the bag. Recourse is, consequently, very rarely had to fire arms for its destruction. Pit-falls and snares are the means commonly resorted to for this purpose. In the latter mode, a fence of thick bushes is carried along the face of the mountain, a few small openings being left at distant intervals: in these are set the snares, and the animals are caught when descending at night to feed. A few are occasionally run down by dogs. Musk sells on the spot at from eight to twelve rupees the Tola. The number of deer killed in a season seldom, probably, amounts to a hundred, though, from the impositions practised in the sale of this article, full double that number of

of musk bags, exclusive of those imported from Tartary, are annually disposed of in this province. "*Bhia*," Marmot, a small brown kind, numerous in the upper parts of the Ghats. "*Kukar*," ferret, small, of an orange color, abounds in the villages, where it burrows in the walls of the houses: zeal in destroying rats secures to it the protection of the inhabitants. The rats are numerous; they offer the peculiarity of tails not exceeding half an inch in length. Most of the animals here enumerated have the reputation, as noticed in the case of the "*Barjí*," of assuming, in winter, the appearance of the surrounding snow. The inaccessibility of the interior during that season, renders the ascertainment of this fact difficult.

The birds peculiar to *Bhot* consist of the—

Falcon and hawk, which breed on the southern ranges; these birds once formed an article of profitable export to Hindustan, but the demand is now trifling. They are caught in decoys called "*Kothas*," which are formed by a wall of netting erected on three sides, the fourth side and the top being left open; on this side the fowler lies concealed and by suddenly emerging when the hawk stoops to seize the bait, drives it in rising against the nets. The bait used is commonly a pigeon. The spots adapted for these "*Kothas*," and at the same time the resort of the hawks, are far from numerous, they are all situated on high and open ridges, far removed from the villages.

"*Hún Wál*," (bird of snow,) the Ptarmigan.

"*Múkao*," wild pigeon, mottled black and white.

"*Kyang*," Cornish chough, easily known from the common jackdaw, by its bright scarlet bill and legs. During the summer season, many

many of the common species of birds, large and small, migrate thither.

Neither fish nor reptiles of any kind exist.

Insects are far from abundant, although they swarm along the contiguous ranges.

The "*Bhaunr*," or wild bee, which builds its nest in the southern parts of the Himalaya, has been already noticed.

Granite and quartz appear to be the prevailing descriptions of rock. The only minerals yet discovered are iron, sulphur, and yellow arsenic. The ore of the former abounds, but is used only for red coloring matter; the second is found in two or three hot springs at the mouth of the *Juwár* pass, but not in sufficient quantity to repay the labor of working for. The yellow arsenic is dug for in two or three places within the *Darma* and *Juwár* Ghats, but the aggregate produce is trifling.

Rock crystal is common, and specimens of considerable magnitude are occasionally procured. Fossil bones and organic remains exist in the most elevated parts of the Ghats. The former, here called "*Bijlí Hár*;" lightning bones, are chiefly found at the crest of the *Nítí* pass: the latter, called "*Chakar Patar*," from its resemblance to a wheel, is procured in a ravine on the northern face of the *Mana* pass. In both instances, the elevation may be assumed at seventeen thousand feet above the sea.

Hot springs are numerous throughout the Himalaya chain, the temperature is found nearly the same in all, from 130° to 138° of Fahrenheit.

No volcano is positively known to exist, but there are grounds for suspecting that the *Nanda Devi* peak contains something of the kind; the *Bhotias* and natives of the neighbouring districts bear unanimous testimony to the occasional appearance of smoke on its summit: this is attributed by them to the actual residence of a deity, and has, accordingly, invested that peak with particular sanctity. A religious *Mela* is held every twelfth year, at the highest accessible point, which is, however, about a mile from the summit: further progress is rendered impossible by a wall of perpendicular ice. The dangers and difficulties incurred by the pilgrims are represented as most appalling, and of the many hundreds who start at each successive period, not fifty find courage to complete the enterprise. Under these circumstances, it is scarcely possible that the question of a crater can be ever decided by actual inspection. It is but just to add, that the extreme altitude of this peak, (already noticed) joined to its monolithic appearance, might, independent of any other considerations, have rendered it sacred in Hindu Mythology.

Personal appearance, language, religion, customs, and tradition, all unite in pointing the origin of the present inhabitants to the adjoining Tartar province of *Tibet*.

In the *Mana*, *Niti*, *Juwar*, and *Byanse* passes, the principal *Bhotias* still trace the emigration of their individual ancestors from some one of the villages or towns in that quarter. The colonization of these Ghats, would not appear to have taken place simultaneously throughout their extent: the first body of emigrants established itself in the villages at the mouth of the Ghat from which the Hindu occupants were forcibly driven, the remaining villages were settled by succeeding adventurers at different intervals, and migration continued to be directed thither till the final dismemberment of the Himalaya chain from *Tibet*. The intimate intercourse

intercourse which has continued to subsist with the mother country since that event, has prevented a variation in language, and the dialect spoken in those Ghats, is strictly that of the adjoining Tartar tribe.

These observations do not apply to the *Darma Ghat:* its inhabitants, though equally of Tartar origin, are traditionally derived from a different race, and their settlement is traced through the circuitous route of Hindustan. They are here considered as the descendants of a body of Mongol Tartars, which was left to secure possession of *Kamaon* after its subjection to TIMUR. This force, thinned by disease and the sword, ultimately retreated to the *Darma* pass, and there formed a permanent establishment.

The histories of TIMUR, mention the subjugation of these hills by one of his *Atabegs*, a fact which is also confirmed by the local records: these consist of little more than an enumeration of former Rajas, with the duration of their respective reigns; they, however, note an interregnum of about twenty years, during which the Mogul sway continued. Vestiges of this race are still found in the centre of the province, particularly at *Dewara* and *Bágeswar*, consisting of tombs, constructed with large flat tiles, and, in other respects, substantially built; these cannot, consequently, be attributed to the aborigenes, who were too rude to have made use of tiles or bricks for any purpose, while they differ both in form and appearance from the graves of Jogis, the only class of Hindus which adopts sepulture. It is therefore to Tartars or Mohammedans only that these graves can be ascribed. The extreme sanctity of *Bágeswar*, a principal "*Prág*," or *Jamtrán*, precludes the supposition that either of these sects would have been suffered, as subjects of a Hindu government, to pollute that place with their dead, while the Mohammedans, as is well known, were never able to effect any conquests within these hills. By the natives,

natives, these tombs* are called Mogul. The *Darma Bhotias*, from the association of the Mohammedan creed with the name of Mogul, repel, as an insult, the extraction here attributed to them; they are, nevertheless, unable to assign any other, while the difference in language, customs, and dress, particularly of the females, proves that they could not have had a common origin with the other *Bhotias*. No opportunity has been offered for comparing the *Darma* dialect with that of the Moguls.

The religion of the *Bhotias* has been naturally influenced by their peculiar situation and pursuits, subjected to a government which, as regarded the infringement of its religious tenets, was ever intolerant. The *Bhotias* have been compelled to conform with the Hindu prejudices; continued intercourse with the latter sect has also led to a gradual adoption of many of its superstitions, while the annual communications maintained with *Tibet* have served to keep alive the belief of their forefathers. The *Bhotias* may now be regarded as Pantheists, paying equal adoration at every temple, whether erected by the followers of *Brahma*, of Budd,h, or of the Lama. The only temples in *Bhot* are small rude buildings erected with loose stones, merely sufficient to shelter the idol. The *Bhotias* have no priests of their own caste, but avail themselves, according to circumstances, of the services of a *Brahmin* or of a *Lama*. Among the *Darma Bhotias*, divination is practised; the omens are taken from the reeking liver of a goat or sheep, sacrificed for the purpose, by ripping up its belly. No undertaking of importance is commenced without this ceremony; when the first augury proves unfavorable, fresh animals are sacrified, and further inspections made; the result of the majority of omens

* Gold ornaments and arms, are reported to have been occasionally found on them, several graves have been exposed in digging foundations at *Bágeswar* since 1815, but they contained only small earthenware lamps.

omens decides the question. The office of diviner appears to be assumed indiscriminately by all males of good age; certain previous purifications are undergone on each occasion.

The *Bhotias* ought necessarily to have no distinctions of caste: the *Mâna, Nîtî,* and *Juwâr Bhotias,* however, pretend to consider those of the *Darma* and *Byansè* Ghats as an inferior sect, and neither eat nor intermarry with them. The descendants of the first colonists in the villages at the mouths of the Ghats, who now confine their pursuits to agriculture, and maintain no direct intercourse with *Tibet,* affect similar pretensions in regard to the *Bhotias* within the Ghats, while all unite in assumptions of superiority to the Natives of *Tibet,* though on their annual visits to that country, they are compelled to drink tea at the houses of their several correspondents, such ceremony being there an indispensable preliminary to every commercial dealing. Of late years, the *Juwâr Bhotias* have affected to imitate the niceties and scruples of *Hindus,* in regard to food, and have assumed the designation of "*Sinh;*" but they have derived no consideration from these pretensions, and continue to be regarded with abhorrence by the *Hindus,* as descendants from a cow-killing race. The policy which may have dictated this line of conduct having now ceased, with the abrogation of the Brahminical government, it may be expected that these pretensions will gradually disappear, and that the *Bhotias* will relapse into the unscrupulous habits of their Tartar ancestors.

In the institution of marriage, the inclinations and will of the female appear to have greater weight than is common in the east, both in regard to the formation of such engagements, and in the subsequent domestic management. Contracts are formed at an early age, but the marriage is not commonly concluded till the parties arrive at maturity.

162,728

Should the female in the mean time make a choice for herself, the previous contract is compromised by the payment of a sum of money. The consideration given by the bridegroom to the father of the bride, varies from three hundred to one thousand rupees: a corresponding portion is returned, which consists of domestic stock, live and dead, and in some of the Ghats is considered as the property of the wife, by whom it is managed for her own benefit. The females are chiefly employed in weaving blankets and coarse serges; the produce of their looms, after supplying the family with clothing, is also, in a great measure, at their own disposal. The nuptial ceremonies are uninteresting, they are invariably accompanied with riot and drunkenness.

The *Bhotias* universally burn their dead; in *Darma*, this ceremony is performed in the month of *Kartik* only; the bodies of those who die intermediately, are committed temporarily to the earth, and at the appointed season, the remains are taken up and burnt.

On these occasions the heir of the deceased is expected to entertain the whole of his kindred, and is commonly impoverished by the prodigality of the expense incurred. A number of goats and *Yaks*, according to his means, are sacrificed at the pile; of the latter animals, one is selected for the particular service of the deceased, and is previously led about with many ceremonies, adorned with flowers and laden with cloth, sugar, spice, and such articles; precedence in the sacrifice is also given to it, and the decapitation is performed by the son-in-law, or some other near relation to the deceased. In the selection of this *Yak*, the departed spirit is appealed to, and its choice is supposed to be indicated in the animal which is the first to shake its tail, when the stall is inspected by the heir. The *Bhotias* universally profess extreme veneration for the manes of their fore-fathers, small monuments to their memory are numerous in the vicinity

vicinity of villages, generally on the summit of some height; distinguished individuals are further honored by images of silver or stone, and by the annual celebration of festivals, on days dedicated to the purpose, when the image is carried in procession about the village, and receives offerings and worship. Among the *Darma Bhotias,* when an individual dies absent from his native village, a clue of worsted is conducted to it from the spot where death occurs. In families of consideration, the thread is extended unbroken throughout; by the poorer classes, it is only laid, in cases of considerable distance, along difficult parts of the road; the object of this superstition is to enable the departed soul to join the spirits of his ancestors. Suttees occasionally take place in *Juwár.*

The original languages of *Bhot* have been previously noticed, they are current only in verbal intercourse, as scarce an individual is to be found in *Bhot* capable of reading or writing the *Tibet,* while of the *Darma* dialect, it does not appear that any characters were ever in use. In the *Mána, Nítí,* and *Juwár* passes, the Hindustani has become naturalized, and forms the medium of both colloquial and written communications; in *Darma,* it is also current, though not so generally; in *Byanse,* it has hitherto made only a partial progress, as the necessity for its acquisition commenced at a recent period.

In the division of time, the Hindu method is followed exclusively.

In weighing and measuring commodities, the *Bhotias* have necessarily two modes of computation, that of the hills and that of *Tibet;* the former has been noticed in a preceding report; of the latter, it will be sufficient to enumerate the denominations which are in most common use.

Gram,

Gram, salt, borax, &c. are sold by measures of capacity, as follows:

8 handfulls make one "*Phúrúwa.*"
8 "*Phúrúwa*" make one "*De.*"
12 "*De,*"..... ,, one "*Dobú,*" or "*Guama.*"

This "*Dobú*" is equivalent to the *Kacha maund* of twenty seers; in some articles it contains eighteen "*De.*" Within the Ghats, the articles above-named are also calculated by the "*Karbich,*" or sheep saddle-bag, taken at four "*Nalis.*" Grain is also computed by the

		Nalis.
"*Lúyattor,*" large "*Karbich,*"	equal to	20
"*Swola,*" or basket, ...	ditto	60
T'hanch, or skin, ...	ditto	60

Wool, sugar, hardware, &c. are weighed by the steelyard, which is divided into "*Nega.*" The *Nega* is about ten sicca weight.

Prepared tobacco, Gúr, &c. are divided into small flat cakes, called "*Pola,*" of which from ten to twelve sell for the rupee.

Cloth is measured by the "*T'hú,*" or cubit, or by the "*Khak,*" *Khagam,* or breadth.

In fine goods, broadcloth, chintz, &c. the piece is computed at eight "*Khak.*" In coarse calicoes, twenty-eight breadths are required to complete the piece. Broadcloth is commonly sold by the "*Báká,*" equal to two breadths, and so called from being the quantity required to make up a robe of that name. Gold is calculated by the "*Sarswo,*" or "*Phetáng,*" equal to seven and a half *Másas.* Gold-dust, separated into "*Phetángs,*" each tied up in a bit of cloth, is current as coin at eight rupees the "*Phetáng.*"

"*Phetáng.*" Silver is computed at the "*Jyú,*" or *Temashí,* (three Masas) and the "*Gorma,*" or current rupee equivalent to four "*Jyú.*" The "*Jyú*" is coined at Ladakh, and is of very uncertain standard: of late years, its metal has been improved. In this province it is called "*Gangatassí,*" and passes at the rate of something more than five to the milled Furrackabad rupee. In large payments, ingots, called "*Lakalo,*" or "*Doja,*" are used, these bear the Lhassa stamp, and are very pure silver; the "*Doja*" weighs seven hundred and sixty *Jyús,* and is current at something less than two hundred rupees.

Bhot, for a considerable period subsequent to its colonization, formed an integral part of the mother county. The trade carried on by its inhabitants rendered them, in some degree, dependant on the will of the neighbouring Cis Himalaya chiefs; but they were long able to repel the contracted efforts of the latter, made for their subjugation.

The ultimate union of these principalities in the monarchies of *Garhwal* and *Kamaon,* about three centuries ago, led to the conquest of the *Mana, Nítí, Juwár* and *Darma* passes, by those states respectively. The *Byánse* pass was severed from the principality of *Júmla* and annexed to *Kamaon* by the *Gorkha* power, about thirty years past. In becoming subject to the Cis Himalaya powers, the *Bhotias* were by no means withdrawn from their allegiance to the parent state, but still continued to acknowledge the supremacy of both; an anomalous state of subjection, which their paramount interests in continuing to be the medium of commercial intercourse between Hindustan and Tartary, will tend to perpetuate. The price extracted by each government for its protection, though much the same in its component details, is very unequal in its amount. The revenue demands of the *Tibet* government consist of "*Sinh Thal,*" land revenue. "*Ya Thal,*" tax on sun-shine. "*Kiún Thal,*" tax on the profits of trade.

 These

These items are all levied at fixed and invariable rates. The "*Sinh Thal*" is assessed at twelve "*Polas*" of *Gúr* per *Kanch*, on the *Khalsa* lands; but as a great portion of each village is held rent-free, on former grants, the aggregate payments under this head are very trifling. The "*Yá Thal*," which, from its name, has probably originated in the migratory habits of the Tartars, who, during the winter, remove to the warmest situations, is assessed at one cake of "*Balma*," or dried yeast per house. The above dues are collected by *Tibet* officers, who visit the Ghats with that view: the whole is received in kind, though the *Gúr* and yeast are partly commuted for sugar, grain, spirits, and coarse calicoes. The "*Kiún Thal*" is levied in the shape of transit duties, "*Kiún Kal*," at the rate of ten per cent. on grain. These are also collected in kind, at the first mart visited by the Bhotias, the loads of every tenth sheep, together with the wool on its back, are there taken, unless commuted by the payment of twenty-seven "*Polas*" of *Gúr* per sheep. Duties are also levied on some few articles, agreeably to the rates fixed by an antient tariff; commodities not included in that schedule, pass free. Broadcloth, and many articles, the exportation of which from hence commenced at a comparatively recent date, fall under the last description. In some cases, individuals are subjected to a tax, called "*Huro*," or plunder, substituted for the "*Kiún Kal*," or transit duties, and levied at nearly the same rates. This, from its name, should be a species of police tax, an insurance against robbery. The inhabitants of the northern village at the head of each Ghat, enjoy certain immunities from these duties, and are, moreover, authorized by the Trans Himalaya government to levy a transit duty of ten per cent. on the salt or borax of the Tibet traders visiting the Ghat. This duty, as well as the "*Kiúnkal*," paid by the Bhotias, is levied only on the first investment of each trader, during the season.

In

In matters of police, the Bhotias are held responsible for the communication to the neighbouring authorities of all important transactions, which may occur in the Himalaya states. The local tribunals take cognizance of all cases brought before them by the Bhotias, whether originating in Tibet or elsewhere. In civil proceedings, the decrees of the court written in the Tibet character and language, and sealed by the presiding officers, are delivered to the successful parties. A confirmation of these documents where they affect general interests, as also of grants exempting lands from public assessment, are obtained by the parties concerned from succeeding governors. It does not appear, that this government ever originates any enquiry into crimes or offences committed by the Bhotias elsewhere, than in Tibet; nor does it delegate any power, judicial or fiscal, to the Bhotia village functionaries. Such are the marks of subjection which the mother country continues to demand from the Bhotias. Those exacted by their Hindoo conquerors have ever been more costly and more extensive. On their final subjugation, the *Bhot Mehals* were subjected to a tribute in gold-dust: the quantity to be paid by each village, was ascertained and recorded in "*Kanch*," or *Tola, Masa;* and *Ratti*, the detailed cess, fixed under these denominations, has since constituted the standard estimate of each village, and represents the modes of measurement in use elsewhere. In Níti, the assessment was calculated in "*Damola*," equivalent to half a "*Kanch*." The assets made available to the government demand, comprised:

1st. Profits of trade.
2d. "Tandkar," or loom-tax.
3d. Produce of agriculture.
4th. Produce of jungles, (roots and drugs).
5th. Musk.
6th. "Kota Báz," hawks.
7th. "Bhera," or wild bees' nests.

In

In the *Kánungo* records, the original *Jama* is made up of separate sums, under these several heads. The aggregate of tribute imposed on each Ghat was as follows:

	Kanch.	Masa.	Ratti.
Juwár,	133	5	2
Darma,	363	1	5
Byanse,	71	9	0
	Damola.		
Nítí,	206	0	0

Mana appears to have been, from the first, granted in religious assignment to the temple of *Badarináth*, therein situate. *Byanse*, as before noticed, was only conquered a few years past by the *Gorkhas*, the *Jama* paid to its former government, *Jumla*, has been assumed with the view to comparison. The rents of two villages in that Ghat which, as being east of the *Káli* river, fall within the *Gorkha* territories, are excluded. The above formed the ordinary revenue. The *Bhotias* were, at the same time, equally liable with other subjects to the extraordinary demands, in the shape of aids and reliefs, on occasions of the marriage of the sovereign, or of his son or daughter, of war, &c. But as their assessment included a tax on trade, they were exempted from the payment of transit and bazar duties, throughout the dominions of their prince.

The villages below the Ghats incorporated with these *Mehals* were subjected to the same system of assessment, the only variation being in the detail of assets, of which, profits of trade form no part. The absence of this item is compensated by the increase under the head of agriculture, arising from an additional crop. As a considerable proportion of the land in these villages has been gradually acquired by the *Bhotias* in property,

property, either through grants or purchases, a view of the amount of their rents will not be irrelevant.

	Kanch.	Masa.	Rati.
Juwár,.....	398	5	6
Darma,.....	42	7	0
	Dumola.		
Nítí,.....	125	0	0

This last sum is exclusive of the rents of *Joshimath* and other villages assigned to *Badarinath*, but which form a part of the district of *Paenkhanda*, in which the *Nítí* pass is also included; the latter name, from being more generally known, has been here adopted.

Mutual convenience naturally led to the commutation of the original article of tribute. The equivalent in silver, was settled at twelve rupees the "*Kanch*," and a fixed and permanent valuation was made of various commodities, the produce of *Tibet*, or of *Bhot*, which were received in payment: as the market prices of these articles fell below the rates in the original schedule, it became the object of the *Bhotias* to extend their payments in them: the proportion was, ultimately, established at one-half in kind, and the rest in coin; and in the event of the *Bhotias* being required to pay the whole of their assessment in money, a deduction of twenty-five per cent. was allowed on the portion payable in merchandize, such being, in point of fact, the actual depreciation in the current prices from the rates fixed in the original appraisement. During the government of the Rajas, the public demand continued unaltered, though subject in its liquidation to the variations, arising from the depreciation above noticed. The greater part of the revenue was assigned to the garrisons of forts in the mouths of the ghats, and to the payment of the civil local functionaries. The residue was collected on the spot, by an Officer annually deputed from

 the

the court for that purpose, to whom also was granted authority for adjudicating the civil and criminal pleas pending among the *Bhotias*. The internal management was left to the *Defteris* or *Patwáris*, and to the "*Búrhas*," or heads of villages, by whom also the detailed cess was apportioned, being laid every third year wholly on the land, and during the intervening period levied in the shape of a capitation, or rather of a property tax. The "*Búrhas*," in addition to the usual dues on marriages, &c., received a small public allowance from the rents of their respective villages: they were also assisted by petty officers, corresponding with the *Mukaddam* and *Kotwal* of the *Hindu* village institutions. These, again, were similarly remunerated. The garrisons above-mentioned, appear to have been retained in the ghats, principally with the view of protecting the inhabitants from the incursions of the *Bhotias* of the neighbouring ghats, more particularly of the "*Játs*,"* or natives of "*Jamla*," a *Bhotia* state, east of the *Kali*.

On the *Gorkha* invasion, the principal opposition made to their arms was from the *Bhotias*: for the period of nine years, after the submission of the rest of *Kumaon*, the *Juwáris* frustrated every effort made for their conquest, and it was a consideration of their commercial interests, rather than any successes of the invaders, which ultimately induced a subjection to that power. This resistance on the part of the *Bhotias*, joined to an exaggerated reputation for wealth, marked them out for peculiar exactions: the public demand rose gradually to Rupees 7,000 in *Niti*, 12,500 in *Juwár*, 10,000 in *Darma*, and 5,000 in *Byanse*, while in some years nearly double those sums were extorted, under various pretences, by the officers

* As the *Játs* of *Hindustan* are considered of *Tartar* race, may there not have been some original connection between their ancestors and the *Játs* of *Jamla*.

officers employed in the collection. The gross receipts of the inhabitants from every source of production, were inadequate to answer such excessive impositions, the capital and stock of individuals were gradually dissipated in their liquidation, and ultimately a load of debt was incurred for that purpose. When both the means and credit of the individual were exhausted, emigration became his only resource; in this manner, the depopulation of the ghats was rapidly taking place, when the magnitude of the evil led to the interference of the Supreme Government. An officer of reputation, Captain BHAGTI THAPA was especially deputed from *Nepal*, for the re-settlement of the *Bhot Mehals;* under his vigorous superintendance, the present difficulties of the *Bhotias* were, in a great degree, removed by the enforced restoration of a portion of the exactions, and by the reduction of the demands of their creditors to the mere principal sum actually advanced; while the principal source of these difficulties was cut off by a remission in the public revenue, reduced to 4,700 for *Niti*, 8,000 for *Juwár*, 7,000 for *Darma*, 2,700 for *Byanse*. The established principle of liquidation, half in money and half in merchandise, continued in force, but no longer afforded to the *Bhotias* its former advantages. The whole of these *Mehals* were included in the Military assignments, and their revenues were either collected by the Assignees themselves, or were leased by them to some responsible individual; in either case, the demand for the half in merchandise was commonly disposed of in gross to some of the *Almora Sahás*, by whose skilful management it was raised to a full equality in value with the money half, at the expence of the *Bhotias*.

The government *Jama* was imposed on each Ghat in one gross sum, and the detailed assessments left to be settled by the *Búrhas* among themselves: in this measure they always assumed the original amount of the village tribute, as the standard for calculation.

On

On the introduction of the British government in 1872 *Sambat*, the authorized collections of the two preceding years, were assumed as a standard for the *Jama* of the current year; as the whole demand was fixed payable in coin, in *Farakhabad Kaldár* Rupees, a deduction of twenty-five per cent. was granted on the half hitherto paid in merchandise, and a further deduction to the same amount was allowed for the discount on the *Gorkha* currency. The net *Jama*, which on the existing system was imposed in one gross sum on each Mehal, including the villages below, as well as those within the Ghats, stood at Fd. Rupees 11,565.

In the year 1875 S. a general abolition of the customs and transit duties throughout the province took place; the tax on the profits of trade hitherto levied from the *Bhotias*, as partaking of the same nature, was included in that measure: a partial remission on the same account was made in the *Jama* of some of the lower villages, while both in these, and in *Bhot*, the items of musk, bees' wax, and hawks, were struck out of the available assests. By this arrangement, the net revenue was reduced to Fd. Rupees 4124.

This demand continued in force for the remaining term of the first triennial settlement, at the second triennial settlement, in 1877 S. and at the recent quinquennial settlement, in 1880 S. a progressive rise took place, on a view of the increase of cultivation, brought about principally by the return of tenants, who had emigrated during the *Gorkha* government, and finally amounted to Fd. Rupees 5812.

The revenue of every year has invariably been liquidated without a balance.

For

For the internal management of these Mehals, the only public officer retained in them is the *Patwári*, who receives from the village *Búrhas* the amount of their *Jama*, and remits the same to the *Sader* treasury. By this functionary are also made the reports connected with Police, relating to casualties, &c. Criminal offences are rare; the total number since 1815, has been confined to four, of which two were murders, one a case of arson, and the fourth a petty theft: the three first-mentioned crimes were perpetrated from motives of revenge. In the same period two inroads, by subjects of a foreign state, have occurred. In the winter of 1822, the village of *Melam* in *Juwár*, was plundered by a band of Tartars, during the periodical absence of its inhabitants. A part of the plunder has since been recovered through the authority of the *Lhassan* viceroy, at *Gartokh;* but the owners have hitherto declined receiving it, unless accompanied with an indemnification for the missing portion. The property in question, consequently, remains in deposit at the *Gartokh* Police Office. The second inroad took place in 1823, at the *Byanse* Ghat, the whole of the villages in which were subjected to a forced contribution by a party of *Játs*, from *Jumla*, on some antiquated claim of tribute. The whole plunder amounting to about 2,000 rupees in value, has since been recovered and restored through the intervention of the *Gorkha* chiefs in *Datti*.

The only manufactures in *Bhot* are woollens, consisting of blankets, and serges of various descriptions; these are partly consumed by the *Bhotias*, in clothing, tents, &c.; the residue is disposed of in other parts of the province: this manufacture is not confined to any distinct class, but is carried on indiscriminately by the females of all ranks: the weaving is performed sitting, one end of the web being fastened to a stone, or stake fixed in the ground, the other secured by a strap to the body of the weaver; the yarn is prepared by the males, who may, at all times, be seen

 engaged

engaged in that employment, with a spindle in their hand, and a roll of wool round their wrist.

Trade, as has been already incidentally noticed, forms the primary object of importance to the *Bhotias*, and is the principal, if not sole consideration which retains them in the unfertile villages of *Bhot*; now, that waste lands, of a far superior quality in the northern pergannas, every where present themselves for occupation. The adjoining province of *Tibet*, here called "*Bhot*," and "*Hiundes*," (snow land) indiscriminately, holds out peculiar attractions to commerce. Subjected, by the rigor of its climate, to perpetual sterility, it depends on the surrounding countries for almost every commodity, both of necessity and of luxury; to remedy these deficiencies, it has, at the same time, been amply furnished by nature with a variety of valuable products; its rivers and deserts abound with gold, in its lakes are produced inexhaustible supplies of salt and borax, while to its pastures it is indebted for wool of an unrivalled quality. In addition to these staple articles, "*Hiundes*" yields many other articles of commercial demand, such as drugs, coarse precious stones, *Chaonr* tails, *Tangans*, &c.: with these wants and resources, the *Hiundes* has naturally attracted the resort of numerous traders from every quarter, and has, in consequence, become a general mart, in which not only the wants of its inhabitants, but the demands of foreign merchants also are supplied. A periodical fair takes place annually in September, at *Gartokh*, the residence of the *Lhassan* viceroy, which is principally attended by traders from *Hindustan*, *Ladakh*, *Cashmer*, *Tartary*, *Yarkhand*, *Lhassa*, and *Siling*, or *China* proper: under the first description are included, the *Bhotias* of this province, though at present those of the *Juwár* Ghat, alone enjoy the unrestricted privilege of visiting *Gartokh*. The trade of *Hiundes* is an exclusive system of monopoly and restriction, which appears to have been originally established for the encouragement of local

and

and particular interests, and is now pertinaciously adhered to, partly from a reverence for ancient forms, and partly through the influence of the Chinese power. The intercourse to which the *Bhotias* are admitted, is considered as a measure of sufferance, and a formal permission is requisite for its annual renewal. The trade from each Ghat is confined to some proximate town, beyond which the *Bhotias* are prohibited from proceeding without especial licence obtained from the local authorities, the *Juwári Bhotias* alone, in consideration of military services rendered by their ancestors, enjoying an immunity from these regulations. On the upper parts of the Ghats becoming practicable, special missions are dispatched by the *Bhotias*, to their respective marts. These *Vakíls* are each attended by a single follower only, and carry a small offering of established value; on reaching their destination, they make a full report of the state of politics and of health in this quarter, the heads of their information are taken down in writing, for transmission to the viceroy at *Gartokh*, and they then receive their dismissal, together with a return in gold-dust, equivalent to the offering brought by them. A *Híuniya* officer commonly accompanies or immediately follows the *Vakíl* for the purpose of verifying the statements made by him, and to collect the tribute due from the *Bhotias*. On the fiat of this officer, depends the re-opening of the intercourse.

This regulation would appear to be intended chiefly as a precaution against the introduction of small pox, or other contagious disorders, as even the British invasion of the hill states occasioned no interruption in the intercourse with *Híundes*, although that event undoubtedly created a considerable sensation there. When the small pox is ascertained to prevail in any Ghat, all communications with its inhabitants is temporarily prohibited. The commercial operations of the season usually commence by the arrival of the *Híuniya* traders in *Bhot*, as the superior strength and hardihood

hardihood of their sheep enable them to cross the snow earlier than the *Bhotias;* from this period (about the end of July,) till the middle of October, the flocks of both parties are employed in plying with loads between the marts and the Ghat villages. The *Hiuniya* traders do not visit any villages below the Ghats, deterred partly by the jealousy of the *Bhotias* and partly by a dread of the climate. The landholders of the northern pergannas, who transport their own produce into *Bhot,* are deterred by the same causes from proceeding to *Hiundes;* even in *Bhot* they are precluded from dealing directly with the *Hiuniyas,* whom they may meet there, but are compelled to barter their merchandize with the *Bhotias.* A few of the *Almora* merchants occasionally visit the nearest marts in *Hiundes,* more particularly *Taklakot,* at the head of the *Byanse* pass; but their ignorance of the *Tibet* dialect, and their want of the means of carriage, render them dependant, to a great degree, on the *Bhotias,* and prevent them from trading in those articles of bulk, such as gram, *gúr,* &c. which afford the most certain and profitable returns. The *Bhotias,* consequently, enjoy, to a great extent, a monopoly of the carrying trade from *Hindustan* to *Tartary,* in the supply of the local demands, in *Hiundes,* and the system in force there operates to confirm a complete monopoly. The regulation which restricts the trade of each Ghat to a prescribed mart, affects the inhabitants of the latter equally with the *Bhotias;* this system is further extended even to individual dealings, and every trader has his privileged correspondent, with whom he alone has the right to barter. These individual monopolies, if they may be so called, are considered as hereditary and disposable property, and where the correspondent becomes bankrupt, the trader is under the necessity of purchasing the right of dealing with some other individual. From successive partitions of family property, and from partial transfers, this right of *Arath* has been gradually sub-divided, and many *Bhotias* collectively, possess a single correspondent. This system differs so far from that of the Hong merchants

in

in China, that it leaves to every *Hiuniya* the power of trafficking directly with the foreign trader, though it restricts his dealings to particular individuals: the only persons who appear to be exempt from its operation in *Hiundes*, are the local officers, civil and military, and the *Lamas*. On the dealings of foreign merchants with each other, it has no effect. A brief notice of the several principal exports and imports may now be taken.

EXPORTS.

Grain forms the staple article of *Bhotia* export; it may be computed that from twenty to thirty thousand maunds of every kind, annually find their way to *Hiundes*, through the five passes collectively; the high prices and rapid sale, which this article invariably commands in that country, lead to the presumption, that the present state of supply is insufficient to the wants of the inhabitants; but no considerable augmentation in the former can be expected to take place with the present inefficient means of transport, to which the *Bhotias* are confined by the difficulties of the passes. As the *Himálaya* villages yield no disposeable surplus produce, the supplies for *Hiundes* are drawn from other parts of the province, chiefly from the northern pergannas. The *Bhotias* make their purchases in the same manner as the *Binjaris*, by carrying salt to the villages, and bartering it for grain. As soon as the loads of the whole flock have been exchanged, it is driven to an intermediate depôt, where the grain is stored and from whence fresh loads of salt are brought by the sheep. During the cold months this system extends to the midland pergannas; from the end of March the flocks ply in the northern districts, and from the beginning of May they are employed in transporting the grain from the foot of the Ghat to the *Himálaya* villages. For the convenience of this traffic, the *Bhotias* have, accordingly, three depôts—one at their *Bhot* village, the second at the base of the *Himálaya*, and the third, some three or four

days' journey below. Grain, to a partial extent, is conveyed by the northern landholders on their own sheep, to the *Himálaya* villages, and there similarly bartered for salt. The rates of barter which now commonly prevail, may be stated as follows. In the midland and northern pergannas, from three to four of wheat or rice for one of salt, and within the Ghats, two of wheat or rice for one of salt. To the *Hiúniyas*, however, the *Bhotias* give only one of wheat or rice for two of salt in *Bhot*, while in *Hiúndes*, they exact double that proportion. Coarse grains, such as *mandua*, *chenna*, &c. generally average half the value of the finer descriptions above mentioned, in this system of exchange. The advantages of this trade to the inhabitants of the northern districts, will be fully appreciated on a view of the state of prices, which, at this moment, prevails in different parts of the province. From the nature of the country, its agricultural produce cannot be made available for distant markets, and the fluctuations of price which may there take place have, beyond a certain sphere, no influence on prices in the interior. At *Almora*, which is supplied from the midland districts of *Kamaon* (proper), wheat is now selling at twenty-five sérs the rupee. In the southern villages, both of *Kamaon* and *Garhwal*, from whence exportation to *Rohilkhand* takes place, the price is nearly the same. In the whole of the northern pergannas, whence the *Bhotias* derive their supplies, the average price may be quoted as still higher. In the western midland pergannas of *Garhwal*, to which none of these demands extend, wheat is selling at two maunds the rupee, and purchasers even at that rate are not forthcoming.

Calicoes.—From the constant use of woollen clothes throughout the year, the consumption of cotton fabrics in *Hiúndes* is small; the demand is confined to the coarsest descriptions, as quantity, not quality, is the first consideration with the *Hiúniya* purchaser. Europe prints are in partial request among the chiefs and foreign merchants. The aggregate value

value of exports, under this head, cannot be estimated at above ten thousand rupees annually.

Hard-ware—including cooking utensils of copper, brass, and iron, coarse cutlery, swords, matchlocks, &c. is exported to the extent of about ten thousand Rupees.

Broad Cloth.—Not more than thirty bales, chiefly of a coarse quality are annually disposed of by the *Bhotias*, but did facilities exist for procuring cloths of the desired qualities and colors, the sales might be very considerably increased. The common military colors, such as red, yellow, blue, green, and grey, are the only ones generally procurable by the *Bhotias*—of some of these colors, the use in *Tartary* is confined to peculiar sects and classes, and for the others, the taste has been long exhausted. Cloths of unusual color, such as olive, various shades of brown, &c. invariably command a quick sale. The enormous advance laid by the *Bhotias* on the prices of this, as well as other articles of export, must also tend to lessen the demand.

Coral—is prized, as an ornament for females, even above precious stones; the large bright scarlet beads of *Mediterranean* coral, will command almost any price. Inferior descriptions also command a ready sale, though at lower rates.

Pearls.—In these, size is the principal desideratum, shape and color are points of less importance; no difficulty is consequently experienced in supplying the demand to its full extent. The export in this, and the preceding article, averages about five thousand rupees in value annually.

Gúr—about one thousand maunds.

Sugar

Sugar Candy—one hundred maunds.

Spices—ten maunds.

Dyes—chiefly lac and indigo, ten maunds.

Wooden Vessels—chiefly cups for tea, are in considerable demand; there are turned from various kinds of wood; those in greatest request are formed of the knot of a particular tree, which is to be found only in the eastern hills, near and beyond *Katmandu*, whither the turners from *Bhot* annually resort. Tea-cups of this wood are deemed by the *Tartars* to possess peculiar virtues, and an unblemished specimen will sell as high as fifty rupees; the price of ordinary cups varies from four annas to two rupees each.

Timber—in the shape of spars and planks, for building, is carried for sale to the nearest marts. Indigent *Bhotias*, who have no other capital but their labor, carry on this traffic.

Cabinet-ware, glass-ware, and a variety of other commodities are partially exported: their aggregate value may be assumed at ten thousand rupees.

IMPORTS.

Salt—the natural produce of lakes in *Hiundes*, is universally preferred in this province, for culinary purposes, to the *Sámbher* and other cheap kinds of salt, from the plains: the latter are considered comparatively bitter and unpalatable, and are only used for cattle. The relative prices of the two kinds of salts in question at *Almora*, are from six to seven rupees the maund for *Bhot*, and three to four rupees for plain salt.

The

The *Bhotias* never part with their salt, except in barter for agricultural produce, and by adhering rigidly to this rule, they are enabled to command a supply of the latter, even in the most unfavourable seasons. The total quantity of salt imported, may be assumed one year with another at fifteen thousand maunds.

Tincal—also the natural produce of a lake in *Hiundes*, for some years subsequent to 1815, formed the most profitable article of speculation, but the demand has now greatly declined. During the *Gorkha* government, that is, up to 1814, not more than a thousand to fifteen hundred maunds of tincal ever reached the plains through this province during the year. On the British invasion, and even before the conquest was completed, large advances were made by British merchants to the *Bhotias*, for the provision of this article. By the competition among the former, the amount of their advances was rapidly augmented up to 1818, when the quantity imported exceeded twenty thousand maunds, as it did also in the two following years 1818 and 1819. This import, as compared with the demand in England, for which market it was chiefly intended, would appear to have been excessive. Heavy losses, and a consequent withdrawal of capital from the speculation were the consequences. The supply has since as rapidly decreased, and may be now stated, at seven to eight thousand maunds. During the above periods, the price has been subject to the same fluctuations up to 1814, the market rate of this article, in its unpicked state, never exceeded three and a half rupees the maund, at the marts of *Kásipur* and *Belári;* in 1818, it had risen to fourteen rupees the maund, and some partial sales were made in that year as high as sixteen rupees; during the two following years 1819-20, the price ranged between twelve and fourteen; it has since gradually fallen to eight, at which it may now be quoted. The article is imported by the *Bhotias*, in its original state, as procured from the lake. By the merchants

the *tincal*, or natural crystals, are picked for the Europe market, and the dust is prepared into refined borax. The residuum, consisting of river sand, is always considerable, varying in different years, from twenty to above thirty per cent. The *Bhotias* are not accused of adulterating the article, though the petty hill traders, who purchased it from them, were, for some time, guilty of such practice to a great extent; the refusal of the plain merchants to take the article from these people, except with a specific assurance against loss in refining, beyond a given proportion, has checked this fraud. The prices in *Hiundes* correspond with those of salt—this article being similarly obtained in barter for grain. A view of the state of import in Great Britain, during the period in discussion, may not be irrelevant :—

Years.	Value.	Years.	Value.	Years.	Value.
1814....	£10,620	1817....	£32,573	1820....	£209,175
1815....	59,200	1818....	76,666	1821....	51,651
1816....	103,301	1819....	215,591	1822....	25,268

The above statement is taken from a periodical publication, where it is given in the amount of Indian import alone.

Wool—the produce of the Tartar sheep, known in commerce under the name of *berjengi*, is imported to the extent of five or six hundred maunds—part of which is consumed by the *Bhotias* in the manufacture of "*Pankhis*,"* and the remainder is taken off by the zemindars of the northern pergannas, for blankets; the money price may be stated at fourteen

* The *Pankhi* is a species of serge, varying in quality, some having the wool left long on one side.

fourteen to fifteen rupees the maund, but it is usually disposed of by the *Bhotias* in barter for oil, or other produce. The supply above noticed is almost wholly obtained from the flocks of *Hiuniya* sheep, which visit *Bhot*, laden with salt, or borax, and are there shorn.

Shawl Wool—the produce of the *Tibet* goat, was temporarily imported during three years, with a view to the provision of the Company's investment: this demand has since ceased. This article may be procured, through the *Bhotias*, to any extent, deliverable at *Bágéswar* in its rough state, mixed with hair, at from thirty-six to forty rupees the maund.

Gold-dust—procured from the sands of every river in *Hiundes*, and also obtained in small lumps by digging near the surface in various parts of the deserts, is imported in small quantities. The frauds found to be practised by the *Hiuniyas* or *Bhotias*, in alloying this metal and in mixing copper or brass filings with the dust, have created a general distrust in the purchase of this article: not more than hundred *phetangs*, or eight hundred rupees worth annually find a sale.

The remaining articles of import, comprising coarse shawls and *pattu*, inferior silks, cow-tails, ponies, drugs, dried fruits, *haritál*, saffron, cured leather, similar to the Russian, &c. &c., may be assumed at twenty thousand rupees annual value.

As during some years from 1816 to 1821, the value of the imports greatly exceeded that of the exports, the deficiency on the latter was supplied by coin. *Farakhabad* new rupees, to a considerable amount, then found their way to *Hiundes*, of which they became the favorite currency.

It

It now only remains to offer a few observations on the former and present state of this commerce. During the time of the Rajas, the *Juwári Bhotias* alone traded on the products and manufactures of the plains, the *Bhotias* of the other *Ghats* confining their dealings to grain; these latter under the *Gorkhali* government, have extended their speculations, and the trade of the *Juwáris* differs from that of the other *Bhotias* now, only in its superior extent. In the early stages of this commerce a regulated and fixed assize appears to have been made by the *Trans-Himalaya* government, agreeably to which the commodities of the two countries were required to be bartered against each other. The commodities of *Hindusthan*, from the smallness of the supply, and from the exactions and robberies to which they were subject in transit through the hills, were appraised at high rates; though these causes have been wholly or partially removed, their original effects remain in force, and the *Bhotias* continue to exact, the old and arbitrary prices. Since 1815, a most material improvement in favor of these traders has taken place; by the encreased facilities of communication with the plains and by the total abolition of transit duties, the imports from thence are now furnished in greater abundance and at reduced prices, at the same time by the influx of capital from the same quarter, the demand and value of every article of import from *Tartary*, have been considerably enhanced: of these advantages, encrease of sales is the only one of which the *Hiuniyas* have partaken in common with the *Bhotias*. Were more equitable principles to be introduced in the transactions of this commerce and were the commodities of *Hindusthan* and *Europe*, offered on fairer terms in the *Hiuniya* market, it is difficult to say to what extent the demand might be augmented, while the *Bhotias* retain their existing monopoly no such desirable modifications can be anticipated, as a continuance of the present exhorbitant rates of profit is almost indispensible to avert general bankruptcy, which must otherwise result from the heavy load of debts, with which the *Bhotias* are universally saddled.

saddled. From the establishment of a direct intercourse between the *Almora* merchants and those of *Tartary*, the desired object will doubtless be gradually gained, the same capital will continue vested in the trade, but the whole profit of the speculation will there fall to the capitalists, while the losses to which the latter is now constantly subjected from the failure of the intermediate trader, will be prevented; under such circumstances the rates of profit would naturally be lowered, and the demand and supply of exports from *Hindusthan* might be expected to increase. To the *Bhotia* the disadvantages resulting from such a change would be more apparent than real, in the trade of the most profitable article of barter, grain, little or no competition could be offered, and though he might no longer be able to speculate in the commerce between *Hindusthan* and *Tartary*, yet the necessity of his services as a carrier would always enable him to command a considerable proportion of the gross returns of that trade.

It would here be desirable to offer some accounts of the adjoining *Trans-Himalaya* state, but the watchful care with which the entrance of Europeans is prevented, the extreme precautions with which Natives of India, not *Bhotias*, are admitted, and the jealous restrictions to which even the *Bhotias* are subjected, preclude the acquisition of any particular and authentic information on points, connected with the local administration and resources of that country; a few general notices may, however, be given.

The province of *Hiundes* is by its inhabitants called "*Nari*," while at *Ladâkh* and to the westward, it appears to be known by the name of *Chang* or *Jhang Tang*, an appellation nearly synonimous with *Hiundes*. It is subject directly to the *Lama* at *Lassa*, and is administered by officers deputed or appointed from thence.

The chief government is entrusted to two Officers conjointly, who are called *Garphans*, with the additional title of *Urgú Ma*, and *Urgú Ya*. They reside at *Gartokh*, and are relieved after three years: natives of *Lassa* and of that neighbourhood, are invariably nominated to these situations. The province is subdivided into districts, each containing a certain number of towns and villages. The internal administration in each district is similarly confided to two officers, called the *Deba*, and *Vazir*, whose appointment also emanates from *Lassa;* the *Deba*, commonly a native of the eastern provinces, is also changed every three years; the *Vazir* who is one of the principal inhabitants of the district, holds his situation during good behaviour. The measures of these officers are subject to the controul of the governors at *Gartokh*.

The *Urgú Ma* and *Deba* appear respectively to enjoy superior consequence and consideration, but to give effect to their acts the concurrence of their colleague is indispensible.

The only regular military force in the province is said to consist of two hundred horse, stationed at *Gartokh;* this body must have been originally recruited from Tartary, as the men of which it is composed are described by the *Bhotias* as a horse eating race. Each town and village has its enrolled militia, liable to be called upon whenever their services are required. The religious institutions are under the exclusive control of the provincial and district *Lamas*, who also appear to exercise considerable influence in the local civil administration.

A rapid communication with the Capital, *Lassa*, is kept up by means of a horse post, the stages are from fifteen to twenty miles apart, and four horses with their riders are retained at each.

The

The several public establishments are all remunerated by grants of revenue in its different branches. These latter have already been enumerated (para. 37). Of the aggregate resources of the province no estimate can be obtained; from the concurrent testimony of the *Bhotias*, it would appear that the *Hiuniyas* are grievously taxed and oppressed under their theocratical form of government. The towns and marts to which the trade from each Ghat is respectively confined, are as follows:

Mána,	.. to ..	*Chaprang.*	*Dharma,*	.. to ..	*Kiunlang.*
Níti,	.. to ..	*Dapa.*	*Byanse,*	.. to ..	*Taklakot.*

These are severally the principal towns of districts, and as such the residence of a *Deba* and a *Vazir.* The *Juwári,* as before observed, have a general licence to trade in every part of the province.

Few opportunities have occurred for obtaining an insight into the peculiar usages and customs of the *Bhotias,* as when down in the *Hindu* portion of the province,—they conform generally to the practises in use there. In their personal appearance the *Bhotias* are perfect Tartars, and exceed the natives of this province in size and stature, more particularly the *Dharma Bhotias,* among whom individuals possessing extraordinary strength are far from uncommon.

The dress of the male sex is in all the Ghats nearly similar, consisting of the common eastern robe and loose trowsers, with a skull cap, all of woollen stuff, to these is added a *kamarband* of calico. The *Dharma* and *Byanse Bhotias* invariably wear woollen boots, reaching nearly to the knee: these are composed of stuffs of different colors sewn chequerwise. The soles are of buffalo-hide.

The

The *Bhotias* of the other Ghats also use boots, of plain woollen stuff, when travelling over snow. In the *Mána*, *Nítí* and *Juwár* Ghats, the females adopted the dress worn by the same sex, and corresponding classes in the northern pargannas. The *Dharma* and *Byanse* women retain a Tartar dress. This consists of a web of cloth folded round the body, and descending from the waist to the ancles in the form of a petticoat, at the waist it is secured by a girdle, commonly of leather: above this is a shift without sleeves, reaching below the knee, while above all is a narrow hood fixed on the top of the head and covering all but the face, shewing a tail descending down the back nearly to the heels; a pair of boots, similar to those of the men, completes the equipment. The above articles of dress are all made from woollen stuff dyed either red or dark blue, having narrow white stripes. The ornaments of these ladies baffle description and bear no resemblauce to any thing worn elsewhere: the most prominent are the ear-rings, commonly of pewter, which in size and shape, may be compared to a massive house door key. Strings of large pieces of coarse amber are worn round the neck in addition to two or three indescribable necklaces. The *Bhotias* of both sexes, and of all classes in every Ghat, carry suspended from the waistband by small chains or thongs of leather, a variety of instruments of daily use, such as knife, spoon, scissars, awl, packing needle, tweezers, steel flint, tobacco, paunch, &c. The *Bhotias* consume large quantities of food, particularly of animal, of which a constant supply is afforded to them in the carcases of their sheep and goats which die from fatigue or disease. The *Mána*, *Nítí* and *Juwár Bhotias* scrupulously abstain from the use of beef of every description; by the *Dharma* and *Byanse Bhotias* the *Chownr Gae* is eaten, and the common kine would probably not be spared by them, but for the general prohibition against the slaughter of that animal which is in force in this province. The *Bhotias* are much addicted to the use of spirituous liquors, in extenuation of which practice they plead necessity from

from the nature of the climate in *Bhot;* when collected together in any place, they have frequent drinking parties, which are continued during the whole night, and sometimes kept up even for the ensuing day. Intoxication with them does not, however, lead to riot or disorder. The liquor in use is of two descriptions—"*Dáru,*" or Whisky, produced by distillation, and "*Ján,*" obtained by simple fermentation: the latter is the favorite beverage. Both are procured from rice: to hasten the fermentation dried yeast, "*Balma,*" reduced to powder, is added: a few hours only are required to render the "*Ján*" fit for use. The "*Balma*" is prepared from the meal of barley or other coarse grain, on which an infusion of the berries or sprigs of the juniper, or of the "*Súrí,*" in water is made to filter: the dough is kneaded, and when ready, dried in small cakes for keeping. The *Balma* is said to retain its properties for many years: its manufacture, which is tedious, forms the exclusive occupation of particular individuals.

Of the *Bhotias,* it may be observed generally, that they are an honest, industrious and orderly race, possessed of much good humour and patience: in their habits they are commonly dirty, more particularly the *Dharmías,* who openly profess an hereditary prejudice against ablutions of every kind; to this profession they fully act, and, except on particular occasions of religious ceremony, never wash either their hands or face. The skirts of their dress serve to cleanse both their persons and their cooking utensils—to scrub the latter, either with sand or water, would, they conceive, be attended by disastrous consequences, as already noticed in treating of the climate.

In concluding this report, it may be added, that, on those points of rural and domestic economy which have been passed unnoticed, little or no variation exists from the practices followed in other parts of the province, and already detailed in a previous report.

II.

AN ESSAY

ON

THE EXTRACTION OF THE ROOTS OF INTEGERS,

AS PRACTISED BY THE ARABS.

By JOHN TYTLER.

If any integer value greater than unity be assigned to the Symbol 10, and the letters a, b, c, d, &c. be each some integer less than 10 so determined, and n be also some integer, then, as is well known, all finite integers, and some fractions, may be expressed by a series of this form—

$$a \cdot 10^{n} + b \cdot 10^{n-1} + c \cdot 10^{n-2} + d \cdot 10^{n-3} \text{ \&c.}$$

(2.) The value generally assigned to 10 for this purpose, is the number of the human fingers, the integers a, b, c, d, &c. are called Digits; and fractions expressible by this series, are called Decimal Fractions.

(3.) Now the problem which the art of Arithmetic properly so called, proposes to resolve is this, having A and B, two numbers expressed by

the above series, it is proposed to express Z, by a similar series, in the following seven equations.

I.	$A + B = Z.$	IV.	$A \div B = Z.$
II.	$A - B = Z.$	V.	$A^{B} = Z.$
III.	$A \times B = Z.$	VI.	$A = Z^{B}.$

VII. $A^{Z} = B$

All other operations on numbers, belong either to the synthetical or analytical part of Algebra.

(4.) These operations, in the above order, successively become more and more complicated, and hence to form an estimate of the state of arithmetic among any people, it is sufficient to enquire into the method by which they perform the most complicated of these operations with which they are acquainted.

(5.) Conformably to this, I here propose to enquire into the method by which the Arabians, supposing A and B to be integers, express Z in the sixth equation or $A = Z^{B}$, or in other words, the Arabian method of extracting the Roots of integer powers. This method is contained in the *Ayoun-ul-Hisab*, a book, respecting which the reader will see all that I know in vol. XIII. of the Researches, p. 461. I believe the Arabs never attempted any general method for the seventh equation, which is the foundation of the Theory of Logarithms, except mere tentation. The extent of their knowledge on the subject of negative exponents, may be seen either in Mr. STRACHEY's History of Algebra, published in the Asiatic Researches, vol. XII. p. 177, or in the Calcutta edition of the *Arabico-Persic Kholasut-ul-Hisab*, p. 313, et seq. I do not find any trace of their acquaintance with fractional exponents.

(6.) I am induced to hope that this enquiry may be the more interesting, from not having been able to find it undertaken any where else; it is neither mentioned in Mr. COLEBROOKE's elaborate translations of Sanscrit Algebra and Arithmetic, nor in Dr. TAYLOR's Lilawati. In the Researches vol. XII. Mr. STRACHEY gives from the *Kholasut-ul-Hisab,* a full and accurate account of Arabian Arithmetic, as far as Multiplication, but is silent respecting the extraction of Roots. He observes, p. 171—"On the other Rules nothing is delivered differing so much from those contained in our common books of Arithmetic, as to require specific mention." Mr. STRACHEY was probably led into this opinion from his having only consulted the *Kholasut-ul-Hisab*, a work far inferior, as I have reason to believe, either to the *Ayoun-ul-Hisab*, or its predecessor, the *Miftah-ul-Hisab*, and which contains no more than the extraction of the Square Root. To that edition of the *Kholasut-ul-Hisab,* which was printed at Calcutta in 1812, with a Persian translation, by *Mouluvee Roshun Alee*, (I presume the same mentioned by Mr. STRACHEY at p. 167, ibid.) there is indeed added an Appendix, containing the extraction the Cube Root, by *Nujm-Uddeen Alee Khan;* but this last contains no more than the bare rule, goes to no higher powers, and sets out by declaring, استخراج کعب از مشکلترین فن حساب است p. 466. "The extraction of the Cube is one of the greatest difficulties in the science of Arithmetic." And even this rule, as far as I can find, has never been translated into English.

(7.) In the 35th number of the Edinburgh Review, Professor PLAYFAIR (I suppose) employs pages 201 and 202 in explaining the method used by the Greeks, for the extraction of the Square Root: and this precedent will, I hope, be a sufficient justification of me for employing so much time upon the present subject.

(8.) For this purpose it will be necessary to have a general demonstration of the extraction of the Roots of all powers, and as it would

perhaps be difficult to refer to a book in which this is detailed so minutely as is required here, I shall endeavour to give one, and shall, accordingly, arrange the present Essay in the following order. There shall be given—

I. A general demonstration of the extraction of the Roots of all powers.

II. An example of this operation after the common European method, exhibiting its conformity to the demonstration.

III. A similar example after the Arabian method, with a similar exhibition.

IV. An extract from the original *Ayoun-ul-Hisab*, containing the Rule, together with a translation and remarks.

(9.) Then to begin orderly—

I. In this demonstration, the symbol $\angle$ shall be used to express less than $>$ to express greater than, and then the following Lemmas must be premised.

Lemma 1. The nth power of 10 is 1 with n cyphers to its right hand.

Thus the first power of 10 is 10, the second is 100, the third is 1,000, the fourth is 10,000, &c. that is 1 with 1, 2, 3, 4, &c. cyphers to its right hand.

Lem. 2. Hence the nth power of 10 contains $n + 1$ figures, and is the least possible number which can do so.

For 10 contains 2, or $1 + 1$ figures and all less numbers contain only one, again 100 contains 3 or $2 + 1$ figures, and all less numbers contain only one or two, again 1000 contains 4 or $3 + 1$ figures, and all less numbers contain only one, two, or three, and $10 = 10^1$, $100 = 10^2$, $1{,}000 = 10^3$, &c.

Lem. 3. Hence the nth power of a Digit, as defined in paragraph 2, cannot contain more than n figures.

For let a be any Digit then $a^n \angle 10^n$, but 10^n is the least number which contains $n + 1$ figures, hence a^n must contain less than $n + 1$ figures, that is not more than n.

Lem. 4. The greatest number which contains only n figures is $10^n - 1$.

For the greatest number with 2 figures is $99 = 100 - 1 = 10^2 - 1$. The greatest number with 3 figures is $999 = 1{,}000 - 1 = 10^3 - 1$. The greatest number with 4 figures is $9{,}999 = 10{,}000 - 1 = 10^4 - 1$, &c.

Lem. 5. Let a be the number of figures in the integer A. Then the number of figures in A^n is not greater than na, nor less than $n(a-1) + 1$.

For by Lem. 4. since there are a figures in A, so the maximum of A is $10^a - 1$, and maximum of A^n is $\overline{10^a - 1}|^n$ which is evidently less than $\overline{10}|^{an}$ or 10^{an}. But 10^{an} is by Lem. 2. the least number which can contain $an + 1$ figures. And hence $(10^a - 1)^n$ or A^n must contain less than $an + 1$ figures, that is not more than an.

Again, since there are a figures in A, so by Lemma 2 the minimum of A is 10^{a-1} and minimum of A^n is $\overline{10^{a-1}}|^n = 10^{(a-1)n}$ and by Lem. 2 $10^{(a-1)n}$ contains $(a-1)n + 1$ figures.

(10.) It would take up a great deal of room to go on demonstrating the following propositions generally for every value of n. It will be much shorter, and equally legitimate, to fix upon an individual index, and demonstrate the extraction of that Root, and then the demonstration may be easily extended to any other Power whatever, by means of the Binomial Theorem. In doing this, I must endeavour not to assign the value of the index n so high as to render the process unnecessarily prolix and cumbersome, and, on the other hand, it must not be taken so low as to render its extension to higher values, obscure and unsatisfactory. Between these two extremes, I shall chuse the number 6, and, making $n=6$, shall proceed to demonstrate the extraction of the 6th Root.

(11.) By the Binomial Theorem $(x+z)^6 = x^6 + 6x^5z + 15x^4z^2 + 20x^3z^3 + 15x^2z^4 + 6xz^5 + z^6$.

and hence $x+z = \sqrt[6]{x^6 + 6x^5z + 15x^4z^2 + 20x^3z^3 + 15x^2z^4 + 6xz^5 + z^6}$.

Now let s and t be any real numbers, and there be given the number s^6+t, in which s is known, then if there can be found a number such, that

$$\left.\begin{array}{l} 6 \cdot s^5 \times \text{that found number} \\ 15 \cdot s^4 \times \overline{\text{that found number}}|^2 \\ 20 \cdot s^3 \times \overline{\text{that found number}}|^3 \\ 15 \cdot s^2 \times \overline{\text{that found number}}|^4 \\ 6 \cdot s \times \overline{\text{that found number}}|^5 \\ \overline{\text{that found number}}|^6 \end{array}\right\}$$

When all added together, the sum should be $= t$, then is $s +$ that found number, the 6th Root of $s^6 + t$.

For let this found number be u, then evidently the above expression becomes

$$6s^5 \times u + 15s^4 \times u^2 + 20s^3 \times u^3 + 15s^2 \times u^4 + 6s \times u^5 + u^6 = t.$$

and then $$s^6 + 6s^5u + 15s^4u^2 + 20s^3u^3 + 15s^2u^4 + 6su^5 + u^6 = s^6 + t$$

and then $$\sqrt[6]{s^6 + t} = \sqrt[6]{s^6 + 6s^5u + 15s^4u^2 + 20s^3u^3 + 15s^2u^4 + 6su^5 + u^6} = s + u$$

as above by Binomial Theorem.

(12.) But if no such number can be found then is s^6+t a surd to the 6th Power. If not, let s^6+t be Rational, and let $\sqrt[6]{s^6+t}=v$. Then either v is $\angle$, $=$ or $>s$.

First let $v=s$ then $v^6=s^6$ and $\angle\ s^6+t$. But by supposition $v=\sqrt[6]{s^6+t}$ and also $v^6=s^6+t$, which is absurd.

Second. Let $v\ \angle\ s$, then by similar reasoning v^6 is $\angle\ s^6$ and consequently $\angle\ s^6+t$ and also $=s^6+t$, which is also absurd.

Third Let $v>s$ and let $v=s+w$. Then $v^6=(s+w)^6=s^6+t$ $=s^6+6\,s^5\,w+15\,s^4\,w^2+20\,s^3\,w^3+15\,s^2\,w^4+6\,sw^5+w^6$. Hence w answers the conditions of par. 11, which yet by supposition no number can answer, which is also absurd.

(13.) Let then s^6+t be integers and thus irrational, and let u be the greatest possible integer such that $6\,s^5\,u+15\,s^4\,u^2+20\,s^3\,u^3+15\,s^2\,u^4+6\,s\,u^5+u^6\ \angle\ t$, then is $s+u$, the greatest integral approximate 6th Root of s^6+t. That is $(s+u)^6\ \angle\ s^6+t$ and $(s+u+1)^6>s^6+t$. For if not let v be an integer $>s+u$ and such that $v^6\ \angle\ s^6+t$. Then since $v>s+u$ and $s+u>s$ so also $v>s$. Let $v=s+w$ and then as before $v^6=(s+w)^6=s^6+6\,s^5\,w+15\,s^4\,w^2+20\,s^3\,w^3+15\,s^2\,w^4+6\,s\,w^5+w^6$ and $\angle\ s^6+t$. Subtract s^6 from both sides, there remains $6\,s^5\,w+15\,s^4\,w^2+20\,s^3\,w^3+15\,s^2\,w^4+6\,s\,w^5+w^6\ \angle\ t$. But since $v>s+u$ and $v=s+w$ so $w>u$, and fulfils the conditions of par. 11, consequently u both is, and is not the greatest number that fulfils these conditions, which is absurd.

(14.) For the same reasons as in par. 10, I shall suppose the present operation to be performed on a number whose 6th Root consists of 6 figures. Let then M be a surd to the 6th power, and let its approximate 6th Root be m, so that $m^6 \angle$ and $(m+1)^6 >$ M. Then since m consists by supposition of 6 figures, so M will contain not more than 36, nor less than 31 figures.

If not, then either M contains fewer figures than 31, or more than 36.

First, let M contain fewer than 31. Now since m contains 6 figures, so by Lem. 5, m^6 contains at least $6 \times 5 + 1$, or 31 figures, which is absurd.

Second, let M contain more than 36. Now since maximum of m by Lem. 4 is $10^6 - 1$ so maximum of $m + 1$ is 10^6 and hence maximum of $(m+1)^6$ is $\overline{10^6}\,|^6$ or 10^{36} which by Lem. 2 is the least number that can contain 37 figures. But M $\angle$ $(m+1)^6$ by supposition. That is, M must always be less than the least number with 37 figures, and, consequently, cannot contain more than 36.

(15.) As a medium, let us suppose that M contains 33 figures, then by the known properties of the series of par. 1, n will there be $= 32$, and M may be thus represented, supposing the coefficients of the powers of 10 to be Digits.

$$a \cdot 10^{32} + b \cdot 10^{31} + c \cdot 10^{30} + d \cdot 10^{29} + e \cdot 10^{28} + f \cdot 10^{27} + g \cdot 10^{26} + h \cdot 10^{25} + i \cdot 10^{24} + j \cdot 10^{23} + k \cdot 10^{22} + l \cdot 10^{21} + m \cdot 10^{20} + n \cdot 10^{19} + p \cdot 10^{18} + q \cdot 10^{17} + r \cdot 10^{16} + s \cdot 10^{15} + t \cdot 10^{14} + u \cdot 10^{13} + v \cdot 10^{12} + w \cdot 10^{11} + x \cdot 10^{10} + y \cdot 10^{9} + z \cdot 10^{8} + \alpha \cdot 10^{7} + \beta \cdot 10^{6} + \gamma \cdot 10^{5} + \delta \cdot 10^{4} + \varepsilon \cdot 10^{3} + \zeta \cdot 10^{2} + \eta \cdot 10 + \theta.$$

For abbreviation, let φ be put $= 10$ and let M be distinguished into parts or periods of 6 figures each, counting from the units place, that is, from θ backwards. Then M will assume this appearance.

$$\begin{array}{l}
\qquad\qquad\qquad\qquad\qquad\qquad a\,\varphi^{32} + b\,\varphi^{31} + c\,\varphi^{30} \\
+ d\,\varphi^{29} + e\,\varphi^{28} + f\,\varphi^{27} + g\,\varphi^{26} + h\,\varphi^{25} + i\,\varphi^{24} \\
+ j\,\varphi^{23} + k\,\varphi^{22} + l\,\varphi^{21} + m\,\varphi^{20} + n\,\varphi^{19} + p\,\varphi^{18} \\
+ q\,\varphi^{17} + r\,\varphi^{16} + s\,\varphi^{15} + t\,\varphi^{14} + u\,\varphi^{13} + v\,\varphi^{12} \\
+ w\,\varphi^{11} + x\,\varphi^{10} + y\,\varphi^{9} + z\,\varphi^{8} + \alpha\,\varphi^{7} + \beta\,\varphi^{6} \\
+ \gamma\,\varphi^{5} + \delta\,\varphi^{4} + \varepsilon\,\varphi^{3} + \zeta\,\varphi^{2} + \eta\,\varphi + \theta
\end{array}$$

which is equal to

$$\begin{array}{l}
\qquad\qquad\qquad\qquad\qquad\qquad (a\,\varphi^{2} + b\,\varphi + c) \times \varphi^{30} \\
+ (a\,\varphi^{5} + e\,\varphi^{4} + f\,\varphi^{3} + g\,\varphi^{2} + h\,\varphi + i) \times \varphi^{24} \\
+ (j\,\varphi^{5} + k\,\varphi^{4} + l\,\varphi^{3} + m\,\varphi^{2} + n\,\varphi + p) \times \varphi^{18} \\
+ (q\,\varphi^{5} + r\,\varphi^{4} + s\,\varphi^{3} + t\,\varphi^{2} + u\,\varphi + v) \times \varphi^{12} \\
+ (w\,\varphi^{5} + x\,\varphi^{4} + y\,\varphi^{3} + z\,\varphi^{2} + \alpha\,\varphi + \beta) \times \varphi^{6} \\
+ \gamma\,\varphi^{5} + \delta\,\varphi^{4} + \varepsilon\,\varphi^{3} + \zeta\,\varphi^{2} + \eta\,\varphi + \theta
\end{array}$$

Then for abbreviation let there be put

$$\begin{array}{l}
\qquad\qquad\qquad\qquad\qquad\qquad a\,\varphi^{2} + b\,\varphi + c = \mathrm{A} \\
d\,\varphi^{5} + e\,\varphi^{4} + f\,\varphi^{3} + g\,\varphi^{2} + h\,\varphi + i = \mathrm{B} \\
j\,\varphi^{5} + k\,\varphi^{4} + l\,\varphi^{3} + m\,\varphi^{2} + n\,\varphi + p = \mathrm{C} \\
q\,\varphi^{5} + r\,\varphi^{4} + s\,\varphi^{3} + t\,\varphi^{2} + u\,\varphi + v = \mathrm{D} \\
w\,\varphi^{5} + x\,\varphi^{4} + y\,\varphi^{3} + z\,\varphi^{2} + \alpha\,\varphi + \beta = \mathrm{E} \\
\gamma\,\varphi^{5} + \delta\,\varphi^{4} + \varepsilon\,\varphi^{3} + \zeta\,\varphi^{2} + \eta\,\varphi + \theta = \mathrm{F}
\end{array}$$

And then M becomes

$$\mathrm{A}\,\varphi^{30} + \mathrm{B}\,\varphi^{24} + \mathrm{C}\,\varphi^{18} + \mathrm{D}\,\varphi^{12} + \mathrm{E}\,\varphi^{6} + \mathrm{F}.$$

which a very little consideration will shew may be thus expressed—

$$\left|\left|\left|\left|\left|\mathrm{A}\varphi^{6}+\mathrm{B}\right|\varphi^{6}+\mathrm{C}\right|\varphi^{6}+\mathrm{D}\right.\right.\varphi^{6}+\mathrm{E}\right|\varphi^{6}+\mathrm{F}$$

in which expression A contains only 3 figures, and B, C, D, E and F each contain 6, and hence by Lem. 4 each of these numbers $\angle\,\varphi^{6}$.

(17). Now let the highest approximate 6th Root of A be a, so that $a^6 \angle$ and $(a+1)^6 > A$. Then is a a Digit. If not $a =$ or $> \varphi$.

First. Let $a = \varphi$, then $a^6 = \varphi^6$ and contains 7 figures by Lem. 2, and yet A only contains 3 figures, which is absurd. A fortiori a cannot be $> \varphi$.

(18). Let $A - a^6 = R$, then $R \angle 6a^5 + 15a^4 + 20a^3 + 15a^2 + 6a + 1$. If not $R =$ or $> 6a^5 + 15a^4 + 20a^3 + 15a^2 + 6a + 1$.

First, let it be equal. Then $A - a^6 = 6a^5 + 15a^4 + 20a^3 + 15a^2 + 6a + 1$, and $A = a^6 + 6a^5 + 15a^4 + 20a^3 + 15a^2 + 6a + 1 = (a+1)^6$. And yet by supposition $A \angle (a+1)^6$—which is absurd. Second, a fortiori it cannot be greater.

(19.) Since $A - a^6 = R$ and $A = a^6 + R$, so $A\varphi^6 + B = (a^6 + R)\varphi^6 + B = a^6\varphi^6 + R\varphi^6 + B = \overline{a\varphi|}^6 + (R\varphi^6 + B)$. Now since $\sqrt[6]{\overline{a\varphi|}^6} = a\varphi$ so by Par. 13) $a\varphi$ will here represent the S and $R\varphi^6 + B$ the t of that Paragraph and if b be the greatest possible integer such that $6.\overline{a\varphi|}^5 b + 15.\overline{a\varphi|}^4 b^2 + 20.\overline{a\varphi|}^3 b^3 + 15.\overline{a\varphi|}^2 b^4 + 6.a\varphi.b^5 + b^6$ that is, $6a^5\varphi^5.b + 15a^4\varphi^4 b^2 + 20a^3\varphi^3 b^3 + 15a^2\varphi^2 b^4 + 6a\varphi b^5 + b^6$ should be less than $R\varphi^6 + B$, then is $a\varphi + b$ the highest approximate 6 Root of $\overline{a\varphi|}^6 + R\varphi^6 + B$ or $A\varphi^6 + B$. and b will represent the u of Par. 13).

(20.) In this case b when found must be a Digit. If not $b =$ or $> \varphi$.

First. Let $b = \varphi$. Then $6a^5\varphi^5 b + 15a^4\varphi^4 b^2 + 20a^3\varphi^3 b^3 + 15a^2\varphi^2 b^4 + 6a\varphi b^5 + b^6 = 6a^5\varphi^6 + 15a^4\varphi^6 + 20a^3\varphi^6 + 15a^2\varphi^6 + 6a\varphi^6 + \varphi^6$. Now R by Par. 18 $\angle 6a^5 + 15a^4 + 20a^3 + 15a^2 +$

$6\,a + 1$; and since R is an integer, so Maximum of R is $6\,a^5 + 15\,a^4 + 20\,a^3 + 15\,a^2 + 6\,a$, and Maximum of $R\,\varphi^6$ is $6\,a^5\,\varphi^6 + 15\,a^4\,\varphi^6 + 20\,a^3\,\varphi^6 + 15\,a^2\,\varphi^6 + 6\,a\,\varphi^6$. Again by Par. 17). B contains 6 figures and hence by Lem 4). Maximum of B is $\varphi^6 - 1$. Hence Maximum of $R\,\varphi^6 + B$ is $6\,a^5\,\varphi^6 + 15\,a^4\,\varphi^6 + 20\,a^3\,\varphi^6 + 15\,a^2\,\varphi^6 + 6\,a\,\varphi^6 + \varphi^6 - 1$. But $6\,a^5\,\varphi^6 + 15\,a^4\,\varphi^6 + 20\,a^3\,\varphi^6 + 15\,a^2\,\varphi^6 + 6\,a\,\varphi^6 + \varphi^6$ exceeds $6\,a^5\,\varphi^6 + 15\,a^4\,\varphi^6 + 20\,a^3\,\varphi^6 + 15\,a^2\,\varphi^6 + 6\,a\,\varphi^6 + \varphi^6 - 1$, by Unit. That is, if $b = \varphi$, then $6\,a^5\,\varphi^5\,b + 15\,a^4\,\varphi^4\,b^2 + 20\,a^3\,\varphi^3\,b^3 + 15\,a^2\,\varphi^2\,b^4 + 6\,a\,\varphi\,b^5 + b^6$, must exceed $R\,\varphi^6 + B$ at least by 1, and yet is also $\angle\, R\,\varphi^6 + B$ which is absurd. A fortiori b cannot be $> \varphi$.

(21.) Then let $A\,\varphi^6 + B$ be put $= P$ and $a\,\varphi + b = p$, then since p is the approximate Root of P, so $p^6 \angle$ and $(p+1)^6 > P$. Let $P - p^6 = R'$. Then is $R' \angle\, 6\,p^5 + 15\,p^4 + 20\,p^3 + 15\,p^2 + 6\,p + 1$. If not $R' =$ or $> 6\,p^5 + 15\,p^4 + 20\,p^3 + 15\,p^2 + 6\,p + 1$.

First. Let it be equal. Then $P - p^6 = 6\,p^5 + 15\,p^4 + 20\,p^3 + 15\,p^2 + 6\,p + 1$, and $P = p^6 + 6\,p^5 + 15\,p^4 + 20\,p^3 + 15\,p^2 + 6\,p + 1 = (p+1)^6$. And yet by supposition $P \angle (p+1)^6$ which is absurd. Second. A fortiori it cannot be greater.

(22.) Since $P - p^6 = R'$ and $P = p^6 + R'$ so $P\,\varphi^6 + C = \overline{|A\,\varphi^6 + B|}\,\varphi^6 + C = (p^6 + R')\,\varphi^6 + C = p^6\,\varphi^6 + R'\,\varphi^6 + C = \overline{p\,\varphi}|^6 + (R'\,\varphi^6 + C)$. Now since $\sqrt[6]{\overline{P\,\varphi}|^6} = p\,\varphi$ so by Par. 13). $p\,\varphi$ will here represent the S and $R'\,\varphi^6 + C$ the t of that Paragraph, and if c be the greatest possible integer such that $6\,\overline{p\,\varphi}|^5\,c + 15\,\overline{p\,\varphi}|^4\,c^2 + 20\,\overline{p\,\varphi}|^3\,c^3 + 15\,\overline{p\,\varphi}|^2\,c^4 + 6\,p\,\varphi\,c^5 + c^6$ that is $6\,p^5\,\varphi^5\,c + 15\,p^4\,\varphi^4\,c^2 + 20\,p^3\,\varphi^3\,c^3 + 15\,p^2\,\varphi^2\,c^4 + 6\,p\,\varphi\,c^5 + c^6$ should be less than $R'\,\varphi^6 + C$ then is $p\,\varphi + c$ the highest approximate 6th Root of $\overline{p\,\varphi}|^6 + R'\,\varphi^6 + C$ or $P\,\varphi^6 + C$ or $\overline{|A\,\varphi^6 + B|}\,\varphi^6 + C$ and c will represent the u of Par. 13).

(23.) In this case c when found must be a Digit. If not $c =$ or $> \varphi$

First, let $c = \varphi$ then $6p^5\varphi^5 c + 15p^4\varphi^4 c^2 + 20p^3\varphi^3 c^3 + 15p^2\varphi^2 c^4 + 6p\varphi c^5 + c^6 = 6p^5\varphi^6 + 15p^4\varphi^6 + 20p^3\varphi^6 + 15p^2\varphi^6 + 6p\varphi^6 + \varphi^6$. Now R′ by Par. 21) $\angle\ 6p^5 + 15p^4 + 20p^3 + 15p^2 + 6p + 1$, and since R′ is an integer so Maximum of R′ is $6p^5 + 15p^4 + 20p^3 + 15p^2 + 6p$ and Maximum of R′ φ^6 is $6p^5\varphi^6 + 15p^4\varphi^6 + 20p^3\varphi^6 + 15p^2\varphi^6 + 6p\varphi^6$. Again by Par. 17). C contains 6 figures and hence by Lem 4. Maximum of C is $\varphi^6 - 1$. Hence then Maximum of R′ φ^6 + C is $6p^5\varphi^6 + 15p^4\varphi^6 + 20p^3\varphi^6 + 15p^2\varphi^6 + 6p\varphi^6 + \varphi^6 - 1$. But $6p^5\varphi^6 + 15p^4\varphi^6 + 20p^3\varphi^6 + 15p^2\varphi^6 + 6p\varphi^6 + \varphi^6$ exceeds $6p^5\varphi^6 + 15p^4\varphi^6 + 20p^3\varphi^6 + 15p^2\varphi^6 + 6p\varphi^6 + \varphi^6 - 1$ by Unit. That is, if $c = \varphi$, then $6p^5\varphi^5 c + 15p^4\varphi^4 c^2 + 20p^3\varphi^3 c^3 + 15p^2\varphi^2 c^4 + 6p\varphi c^5 + c^6$ must exceed R′ φ^6 + C at least by 1, and yet is also $\angle$ R′ φ^6 + C, which is absurd. A fortiori c cannot be $> \varphi$.

(24.) Then let P φ^6 + C be put = P′ and $p\varphi + c = p'$ then since p' is the greatest approximate Root of P′ so $p'^6 \angle$ P′ and $(p'+1)^6 >$ P′. Let P′$-p'^6$ = R″ Then by similar reasoning to that by which R′ was proved $\angle\ 6p^5 + 15p^4 + 20p^3 + 15p^2 + 6p + 1$, may R″ be proved $\angle\ 6p'^5 + 15p'^4 + 20p'^3 + 15p'^2 + 6p' + 1$. And by continuing with P′ and p' the same reasoning that was applied to P and p, there will be found $p'\varphi + d$ or p'' the highest approximate Root of P′ φ^6 + D or P″. That is $\overline{|p\varphi + c|}\,\varphi + d$ or $\overline{|\overline{|a\varphi + b|}\,\varphi + c|}\,\varphi + d$ is the greatest approximate Root of $\overline{|P\varphi^6 + c|}\,\varphi^6 + D$ or $\overline{|\overline{|A\varphi^6 + B|}\,\varphi^6 + c|}\,\varphi^6 + D$ and P″$-p''^6$ will be equal to R‴.

(25.) And by a continuation of the same reasoning, there will successively be found—

First. $p''' = p''\varphi + e = \sqrt{\sqrt{\sqrt{a\varphi + b}\,\varphi + c}\,\varphi + d}\,\varphi + e$, the greatest approximate 6th Root of P''' or $P''\varphi^6 + E$, or $\sqrt{\sqrt{\sqrt{A\varphi^6 + B}\,\varphi^6 + C}\,\varphi^6 + D}\,\varphi^6 + E$. And $P''' - p'''$ will be $= R^{iv}$.

Second. $p^{iv} = p'''\varphi + f = \sqrt{\sqrt{\sqrt{\sqrt{a\varphi + b}\,\varphi + c}\,\varphi + d}\,\varphi + e}\,\varphi + f$ the greatest approximate 6th Root of P^{iv} or $P'''\varphi^6 + F$ or $\sqrt{\sqrt{\sqrt{\sqrt{A\varphi^6 + B}\,\varphi^6 + c}\,\varphi^6 + D}\,\varphi^6 + E}\,\varphi^6 + F$, which is the original number M proposed in par. 16). and $P^{iv} - p^{iv}_{6} = R^{v}$. That is $p^{iv} = m$ of par. 14).

(26.) And evidently similar reasoning may be continued to any length. Let it now be proposed to pursue this operation so as to find a certain number of decimal places in the Root, and to avoid as before par. 10), the trouble of a general demonstration let it be proposed to find the Root to 3 decimal places. Then multiply M by $\varphi^{6\times 3}$ or φ^{18}, and by the principles of the series in par. 1). $M\varphi^{18}$ will contain 33 + 18, or 51 figures as by par. 15). And of these, as will easily be perceived, the 18 lowest places are Cyphers. That is by the reasoning of par. 15.

$$M\varphi^{18} = A\varphi^{48} + B\varphi^{42} + C\varphi^{36} + D\varphi^{30} + E\varphi^{24} + F\varphi^{18} + 0\varphi^{12} + 0\varphi^{6} + 0.$$

and, consequently, by operating according to the principles given above, the approximate Root will be found of this form.

$$a\varphi^8 + b\varphi^7 + c\varphi^6 + d\varphi^5 + e\varphi^4 + f\varphi^3 + g\varphi^2 + h\varphi + k.$$

Let this Root be put $= \mu$ so that $\mu^6 \angle$ and $(\mu + 1)^6 > M\varphi^{18}$. Then

evidently $\frac{\mu^6}{\varphi^{18}} \angle \frac{M\,\varphi^{18}}{\varphi^{18}}$ that is $\angle$ M. And similarly $\frac{(\mu+1)^6}{\varphi^{18}} > M$. Hence then $\sqrt[\frac{1}{6}]{\frac{\mu^6}{\varphi^{18}}}$ or $\frac{\mu}{\varphi^3} \angle M^{\frac{1}{6}}$ and $\sqrt[\frac{1}{6}]{\frac{(\mu+1)^6}{\varphi^{18}}}$ or $\frac{\mu+1}{\varphi^3} > M^{\frac{1}{6}}$.

That is $\frac{\mu}{\varphi^3}$ or $\frac{a\varphi^8 + b\varphi^7 + c\varphi^6 + d\varphi^5 + e\varphi^4 + f\varphi^3 + g\varphi^2 + h\varphi + k}{\varphi^3}$ is the approximate 6th Root of M, and is equal to $a\varphi^5 + b\varphi^4 + c\varphi^3 + d\varphi^2 + e\varphi^1 + f\varphi^0 + g\varphi^{-1} + h\varphi^{-2} + k\varphi^{-3}$ which, according to the well known laws of the series of par. 1,) contains 3 decimal places; viz. $g\varphi^{-1} + h\varphi^{-2} + k\varphi^{-3}$. And since $\frac{\mu+1}{\varphi^3} > M^{\frac{1}{6}}$ so is $\frac{\mu}{\varphi^3}$ the highest approximate Root with 3 decimal places.

(27.) If for 3 decimal places, there be required any other number, then let the number of decimal places required be put $= z$, and then it is obvious that in this reasoning for $M\varphi^{6\times3}$ and $\frac{\mu^6}{\varphi^{18}}$ there is to be substituted M^{6z} and $\frac{\mu^6}{\varphi^{6z}}$, and the very same process will give a Root with a z number of decimal places.

(28.) But I have not been able to find that the Arabs were acquainted with this method of approximating to the truth, and I therefore proceed to explain their contrivance for adding a fraction to the integral approximate Root, such that the sum should of course be greater than that integral Root, and yet less than the truth, and consequently should approximate still more nearly to the truth.

Let M be a surd integer to index n, and m its approximate root, so that $m^n \angle$ and $(m+1)^n >$ M. Let $M - m^n = r$ and $M = m^n + r$. Then is M always $> \left| m + \frac{r}{(m+1)^n - m^n} \right|^n$ That is $m + \frac{r}{(m+1)^n - m^n}$ is an approximate n^{th} Root of M, greater than m the integral Root.

For as before, let n be expounded by 6. Then obviously $(m+1)^6 - m^6 = 6m^5 + 15m^4 + 20m^3 + 15m^2 + 6m + 1$. Now since $\sqrt[6]{M} > m$ let $\sqrt[6]{M} = m + x$. Then since $\sqrt[6]{M} \angle m + 1$, so $x \angle 1$ and is a proper fraction. Then $M = (m+x)^6 = m^6 + 6m^5x + 15m^4x^2 + 20m^3x^3 + 15m^2x^4 + 6mx^5 + x^6$ and $M - m^6 = 6m^5x + 15m^4x^2 + 20m^3x^3 + 15m^2x^4 + 6mx^5 + x^6 = r$. Hence $\frac{r}{(m+1)^6 - m^6} = \frac{6m^5x + 15m^4x^2 + 20m^3x^3 + 15m^2x^4 + 6mx^5 + x^6}{6m^5 + 15m^4 + 20m^3 + 15m^2 + 6m + 1}$. Then $x > \frac{r}{(m+1)^6 - m^6}$.

If not, then $x =$ or $\angle \frac{r}{(m+1)^6 - m^6}$. First let $x = \frac{r}{(m+1)^6 - m^6}$.

Then $x = \frac{6m^5x + 15m^4x^2 + 20m^3x^3 + 15m^2x^4 + 6mx^5 + x^6}{6m^5 + 15m^4 + 20m^3 + 15m^2 + 6m + 1}$ and hence $6m^5x + 15m^4x + 20m^3x + 15m^2x + 6mx + x = 6m^5x + 15m^4x^2 + 20m^3x^3 + 15m^2x^4 + 6mx^5 + x^6$, an equation which is evidently absurd, unless $x = 1$. But x is also a proper fraction, which is absurd.

Secondly, a fortiori x not $\angle \frac{r}{(m+1)^6 - m^6}$ for then also $6m^5x + 15m^4x + 20m^3x + 15m^2x + 6mx + x \angle 6m^5x + 15m^4x^2 + 20m^3x^3 + 15m^2x^4 + 6mx^5 + x^6$, which requires x to be > 1. also absurd.

Then since $x > \frac{r}{(m+1)^6 - m^6}$. so $m + x > m + \frac{r}{(m+1)^6 - m^6}$. and $(m+x)^6$ or M also $> \left| m + \frac{r}{(m+1)^6 - m^6} \right|^6$ as above.

(29.) Here it is evident, that if any constant value be assigned to m, then if r be small, that is in case the integral Root differ but little from the true Root, then the fraction $\frac{r}{(m+1)^n - m^n}$ is also small, but if r be large, that is in case the integral Root, differ much from the true Root, then the fraction $\frac{r}{(m+1)^n - m^n}$ is large. That is, the compensation made by the fraction is proportionate to the error of the integral Root.

(30.) I need scarely add, that whenever it is required to extend the above demonstration to any other index than 6, then for the individual numbers 6, 15, 20, 15, 6, 1, there are to be substituted the general co-efficients of the binomial theorem n, $\frac{n \cdot n-1}{2}$, $\frac{n \cdot n-1 \cdot n-2}{2 \cdot 3}$, $\frac{n \cdot n-1 \cdot n-2 \cdot n-3}{2 \cdot 3 \cdot 4}$ &c. and the same reasoning applied as that given above.

(31.) I now proceed in order:—

II. To exemplify the above demonstration, by the actual extraction of the 6th Root of a given number, according to the directions contained in European books of Arithmetic. I therefore chuse to extract the 6th Root of the number

166, 571, 800, 758, 593, 887, 308, 296, 025, 335, 490.

which consists as in par. 14) of 33 figures. And the operation is thus exhibited.

```
166, 571, 800, 758, 593, 887, 308, 296, 025, 335, 490. (234567
 64
102, 571, 800
 84, 035, 889
 18, 535, 911, 758, 593
 16, 134, 619, 913, 216
  2, 401, 291, 845, 377, 887, 308
  2, 116, 025, 521, 169, 640, 625
     285, 266, 324, 208, 246, 683, 296, 025
     255, 443, 315, 383, 323, 683, 729, 856
      29, 823, 008, 824, 922, 999, 566, 169, 335, 490
      29, 823, 008, 824, 922, 999, 565, 181, 681, 169
                                     987, 654, 321.
```

(32.) And the Rule given for its performance is as follows:

Article (*a*). Place a dot over the units place and over every succeeding 6th figure, counting to the left hand, that is, over the 7th, 13th, 19th, 25th, and 31st places. Then beginning at the left hand; call 166 the first period; 571,800 the second period; 758,593 the third period; and so on.

(*b*). Find the nearest approximate 6th Root of the first period 166. This by trial is 2, For $2^6 = 64$ and $\angle 166$ and $3^6 = 729$ and > 166. Write this 2 separated by a semicircle to the right hand of the given number, and call it the first found figure of the Root.

(*c*). Call the 6th Power of the first found figure of the Root which is $2^6 = 64$, the first Subtrahend.

(d). Subtract 64, this first Subtrahend from 166 the first period, and call 102 the first Remainder.

(e). To the right hand of the first Remainder annex the second period 571,800, so as to make it 102,571,800. Call this the first Resolvend.

(f). Seek the greatest number with the following properties. That if there be taken—

$$6 \times (\text{ten times the first found figure of the Root})^5 \times (\text{this sought number})$$

$$+ 15 \times (\text{ten times the first found figure of the Root})^4 \times (\text{this sought number})^2$$

$$+ 20 \times (\text{ten times the first found figure of the Root})^3 \times (\text{this sought number})^3$$

$$+ 15 \times (\text{ten times the first found figure of the Root})^2 \times (\text{this sought number})^4$$

$$+ 6 \times (\text{ten times the first found figure of the Root}) \times (\text{this sought number})^5$$

$$+ (\text{this sought number}).^6$$

The sum of all these added together may not exceed the first Resolvend 102,571,800.

Then 3 is the number which fulfils these conditions. For since 2 is the first found figure of the Root, if 3 is the sought number, the above expression becomes—

$$
\begin{array}{rcrcrcr}
6\cdot 20^5\cdot 3 & = & 6\cdot 3{,}200{,}000\cdot & 3 & = & 57{,}600{,}000 \\
+\ 15\cdot 20^4\cdot 3^2 & = & 15\cdot\ 160{,}000\cdot & 9 & = & 21{,}600{,}000 \\
+\ 20\cdot 20^3\cdot 3^3 & = & 20\cdot\ 8{,}000\cdot & 27 & = & 4{,}320{,}000 \\
+\ 15\cdot 20^2\cdot 3^4 & = & 15\cdot\ 400\cdot & 81 & = & 486{,}000 \\
+\ 6\cdot 20\cdot 3^5 & = & 6\cdot\ 20\cdot & 243 & = & 29{,}160 \\
+\ 3^6 & & & 729 & = & 729 \\
\hline
\end{array}
$$

84,035,889, which is $\angle$ 102,571,800. And 3 is the greatest number which will answer these conditions. For if 4 be substituted in this expression for the sought number, it will become—

$$
\begin{array}{rcrcrcr}
6\cdot 20^5\cdot 4 & = & 6\cdot 3{,}200{,}000\cdot & 4 & = & 76{,}800{,}000 \\
+\ 15\cdot 20^4\cdot 4^2 & = & 15\cdot\ 160{,}000\cdot & 16 & = & 38{,}400{,}000 \\
+\ 20\cdot 20^3\cdot 4^3 & = & 20\cdot\ 8{,}000\cdot & 64 & = & 10{,}240{,}000 \\
+\ 15\cdot 20^2\cdot 4^4 & = & 15\cdot\ 400\cdot & 256 & = & 1{,}536{,}000 \\
+\ 6\cdot 20\cdot 4^5 & = & 6\cdot\ 20\cdot & 1024 & = & 122{,}880 \\
4^6 & = & & 4096 & = & 4{,}096 \\
\hline
\end{array}
$$

127,102,976, which is $>$ 102,571,800, and consequently would not answer.

(b'). Place 3, the number now found, to the right hand of 2, the first found figure of the Root, in the semicircle Article b.) so as to make it 23. Call 3 the second found figure of the Root, and 23 the found figures of the Root.

(c'). Call 84,035,889 the sum found by Art. f.) the second Subtrahend.

(d'). Subtract 84,035,889 the second Subtrahend from 102,571,800 the first Resolvend, and call 18,535,911 the second Remainder.

(e'). To the right hand of the second Remainder annex the third Period 758,593 so as to make it 18,535,911,758,593. Call this the second Resolvend.

(f'). Seek the greatest number with the following properties. That if there be taken—

6 × (ten times the two first found figures of the Root)^5 × (this sought number)

+ 15 × (ten times the two first found figures of the Root)^4 × (this sought number.)^2

+ 20 × (ten times the two first found figures of the Root)^3 × (this sought number.)^3

+ 15 × (ten times the two first found figures of the Root)^2 × (this sought number)^4

+ 6 × (ten times the two first found figures of the Root) × (this sought number.)^5

+ (this sought number.)^6

The sum of all these added together may not exceed the second Resolvend 18,535,911,758,593.

Then 4 is the number which fulfils these conditions. For since 23 re the two first found figures of the Root, if 4 is the sought number, the bove expression becomes—

$6 \cdot 230^5 \cdot 4$	$=$	$6 \cdot 643{,}634{,}300{,}000 \cdot$	4	$=$	$15{,}447{,}223{,}200{,}000$
$+ 15 \cdot 230^4 \cdot 4^2$	$=$	$15 \cdot 2{,}798{,}410{,}000 \cdot$	16	$=$	$671{,}618{,}400{,}000$
$+ 20 \cdot 230^3 \cdot 4^3$	$=$	$20 \cdot 12{,}167{,}000 \cdot$	64	$=$	$15{,}573{,}760{,}000$
$+ 15 \cdot 230^2 \cdot 4^4$	$=$	$15 \cdot 52{,}900 \cdot$	256	$=$	$203{,}136{,}000$
$+ 6 \cdot 230 \cdot 4^5$	$=$	$6 \cdot 230 \cdot$	1024	$=$	$1{,}413{,}120$
$+ 4^6$	$=$		4096	$=$	$4{,}096$

16,134,619,913,216, which

$< 18{,}535{,}911{,}758{,}593$. And 4 is the greatest number which will nswer these conditions. For if 5 be substituted in this expression for the ought number, it will become—

$6 \cdot 230^5 \cdot 5$	$=$	$6 \cdot 643{,}634{,}300{,}000 \cdot$	5	$=$	$19{,}309{,}029{,}000{,}000$
$+ 15 \cdot 230^4 \cdot 5^2$	$=$	$15 \cdot 2{,}798{,}410{,}000 \cdot$	25	$=$	$1{,}049{,}403{,}750{,}000$
$+ 20 \cdot 230^3 \cdot 5^3$	$=$	$20 \cdot 12{,}167{,}000 \cdot$	125	$=$	$30{,}417{,}500{,}000$
$+ 15 \cdot 230^2 \cdot 5^4$	$=$	$15 \cdot 52{,}900 \cdot$	625	$=$	$495{,}937{,}500$
$+ 6 \cdot 230 \cdot 5^5$	$=$	$6 \cdot 230 \cdot$	$3{,}125$	$=$	$4{,}312{,}500$
5^6	$=$		$15{,}625$	$=$	$15{,}625$

20,389,350,515,625, which

$> 18{,}535{,}911{,}758{,}593$, and consequently would not answer.

b″. Place 4, the number now found, to the right hand of 23, the two rst found figures of the Root in the semi-circle Art. *b*,) so as to make 234. Call 4 the third found figure of the Root, and 234 the found figures f the Root.

c''. Call 16,134,619,913,216, the sum found by Art. *f'*,) the third Subtrahend.

d''. Subtract 16,134,619,913,216 the third Subtrahend from 18,535,911,758,593 the second Resolvend, and call 2,401,291,845,377 the third Remainder.

e''. To the right hand of the third Remainder annex the fourth Period 887,308, so as to make it 2,401,291,845,377,887,308. Call this the third Resolvend.

And this operation must be analogously continued thus—

f''. Seek the greatest number with the following properties. That if these taken—

$6 \times$ (ten times the found figures of the Root)^5 $\times$ (this sought number).

$+ 15 \times$ (ten times the found figures of the Root)^4 $\times$ (this sought number)^2.

$+ 20 \times$ (ten times the found figures of the Root)^3 $\times$ (this sought number)^3.

$+ 15 \times$ (ten times the found figures of the Root^2 $\times$ (this sought number)^4.

$+ 6 \times$ (ten times the found figures of the Root) $\times$ (this sought number)^5.

$+$ (this sought number)^6.

The sum of all these added together may not exceed the last Resolvend.

(b‴.) Place the number now found to the right hand of the found figures of the Root in the semicircle Art. *b)*. Call the number now found the last found figure of the Root, and the whole of the figures in the semicircle, the found figures of the Root.

(c‴.) Call the sum found by Art. *f″* the last Subtrahend.

(d‴.) Subtract the last Subtrahend from the last found Resolvend, and call the Result the next Remainder.

(e‴.) To the right hand of this Remainder annex the next Period, and continue this circle of operations till there be no period in the original given number so to annex.

And thus it will be found that—

The fourth figure of the Root is 5.

The fourth Subtrahend is—

$$6 \cdot 2340^5 \cdot 5 + 15 \cdot 2340^4 \cdot 5^2 + 20 \cdot 2340^3 \cdot 5^3 + 15 \cdot 2340^2 \cdot 5^4 + 6 \cdot 2340 \cdot 5^5 + 5^6$$
$$= 2{,}116{,}025{,}521{,}169{,}640{,}625.$$

The fourth Remainder is 285,266,324,208,246,683.

Then the fifth figure of the Root is 6.

The fifth Subtrahend is 255,443,315,383,323,683,729,856.

The fifth Remainder is 29,823,008,824,922,999,566,169.

Then the sixth figure of the Root is 7.

The sixth Subtrahend is 29,823,008,824,922,999,565,181,681,169.

And the sixth Remainder, with which the operation concludes, is 987,654,321.

(33). I now proceed to show the conformity of this Rule, with the demonstration given in Par. 11). et seq. and for this purpose must premise the following—

Lemma 6. If to the right hand of a Row of a figures another Row consisting of an nth number of places be annexed, this is equivalent to multiplying the first Row by 10^n and adding to the product the number expressed by the second Row.

Thus let 9,876 be a Row of figures, and 123,456 a second Row. In this second Row there are 6 figures, then if it be written to the right hand of, and in one line with the first Row, it will become $9{,}876{,}123{,}456 = 9{,}876{,}000{,}000 + 123{,}456 = 9{,}876 + 10^6 + 123{,}456$. This is too evident to require farther illustration.

(34.) Now M (Par. 15.) is expounded in the present example by the number 166,571,800,758,593,887,308,296,025,335,490, so placing the dots over every 6th place, as directed in Par. 22, Art. *a*). distinguishes it by Lem. 6 as follows:

$$\begin{aligned}
&166{,}000{,}000{,}000{,}000{,}000{,}000{,}000{,}000{,}000{,}000. \\
&+ 571{,}800{,}000{,}000{,}000{,}000{,}000{,}000{,}000. \\
&+ 758{,}593{,}000{,}000{,}000{,}000{,}000{,}000. \\
&+ 887{,}308{,}000{,}000{,}000{,}000. \\
&+ 296{,}025{,}000{,}000. \\
&+ 335{,}490.
\end{aligned}$$

That is equal to

$166 \cdot 10^{30} + 571{,}800 \cdot 10^{24} + 758{,}593 \cdot 10^{18} + 887{,}308 \cdot 10^{12} + 296{,}025 \cdot 10^{6} + 335{,}490.$

Then evidently by Par. 16.)

166 consists of 3 figures, and expounds A.
571,800 consists of 6 figures, and expounds B.
758,593 ..... similarly expounds C.
887,308 ..... similarly expounds D.
296,025 ..... similarly expounds E.
335,490 ..... similarly expounds F.

And hence, by the reasoning of Par. 16) M becomes equal to, (φ being put $= 10$)

$$\overline{|\overline{|\overline{|\overline{|166\,\varphi^6 + 571{,}800|}\,\varphi^6 + 758{,}593|}\,\varphi^6 + 887{,}308|}\,\varphi^6 + 296{,}025|}\,\varphi^6 + 335{,}490.$$

And hence in succession—

$A\,\varphi^6 + B$ or P is expounded by $166\,\varphi^6 + 571{,}800$, or 166,571,800 by Lem. 6.

$\overline{|A\,\varphi^6 + B|}\,\varphi^6 + C$ or $P\,\varphi^6 + C$ or P' by $\overline{|166\,\varphi^6 + 571{,}800|}\,\varphi^6 + 758{,}593$, or 166,571,800,758,593.

$\overline{|\overline{|A\,\varphi^6 + B|}\,\varphi^6 + C|}\,\varphi^6 + D$ or $P'\,\varphi^6 + D$ or P'' by

$\overline{|\overline{|166\,\varphi^6 + 571{,}800|}\,\varphi^6 + 758{,}593|}\,\varphi^6 + 887{,}308$, or 166,571,800,758,593,887,308

$\boxed{\boxed{\boxed{A\varphi^6+B}\ \varphi^6+C}\ \varphi^6+D}\ \varphi^6+E$ or $P''\ \varphi^6+E$ or P''' by

$\boxed{\boxed{\boxed{166\,\varphi^6+571{,}800}\ \varphi^6+758{,}593}\ \varphi^6+887{,}308}\ \varphi^6+296{,}025$, or 166, 571,800,758,593,887,308,296,025.

And hence $P'''\ \varphi^6 + F$ or P^{IV} by the same number as M (Par. 25.)

(b.) Now the highest approximate Root of 166 or A is 2. Hence 2, the first found figure of the Root, expounds a (Par. 17).

(c.) Then $2^6 = 64 =$ first Subtrahend, expounds a^6.

(d.) Then $166 - 64 = 102$ expounds $A - a^6$ or R and is first Remainder.

(e.) Since B is expounded by 571,800 and consists of 6 figures, so 102,571,800 by Lem. 6 expounds $R\ \varphi^6 + B$, and is first Resolvend.

(f.) Since a is expounded by 2, so $a\ \varphi$ is expounded by 20, and $a^2\ \varphi^2$ or $\overline{a\ \varphi}|^2$ by 20^2, and $a^3\ \varphi^3$ or $\overline{a\ \varphi}|^3$ by 20^3, &c. hence $6\,a^5\varphi^5 + 15\,a^4\varphi^4 + 20\,a^3\varphi^3 + 15\,a^2\varphi^2 + 6\,a\,\varphi + 1$ is expounded by $6\cdot 20^5 + 15\cdot 20^4 + 20\cdot 20^3 + 15\cdot 20^2 + 6\cdot 20 + 1$, and since 3 substituted as directed produces by the sum $6\cdot 20^5\cdot 3 + 15\cdot 20^4\cdot 3^2 + 20\cdot 20^3\cdot 3^3 + 15\cdot 20^2\cdot 3^4 + 6\cdot 20\cdot 3^5 + 3^6$ a number 84,035,889 smaller than 102,571,800 or $R\ \varphi^5 + B$, and since 3 is the greatest number which will do so, so 3 expounds the b of the sum $6\,a^5\,\varphi^5\,b + 15\,a^4\,\varphi^4\,b^2 + 20\,a^3\,\varphi^3\,b^3 + 15\,a^2\,\varphi^2\,b^4 + 6\,a\,\varphi\,b^5 + b^6$ as by Par. 19).

(b′.) Then 3, the second found figure of the Root, expounds b (Par. 20) and since 2 expounds a, and there is but one figure in b, so by Lem. 6) $a\,\varphi + b$ is expounded by 23. And since p by Par. 21) $= a\,\varphi + b$ so p is expounded by 23. And hence 23 is the highest approximate Root of $A\,\varphi^6 + B$ or P or 166,571,800, the two first periods of the given number.

As is easily tried, for $23^6 = 148{,}035{,}889$, which is less, and $24^6 = 191{,}102{,}976$, which is greater than 166,571,800.

(c′.) Then 84,035,889 the second Subtrahend expounds $6\,a^5\,\varphi^5\,b + 15\,a^4\,\varphi^4\,b^2 + 20\,a^3\,\varphi^3\,b^3 + 15\,a^2\,\varphi^2\,b^4 + 6\,a\,\varphi\,b^5 + b^6$.

(d′.) Since by Par. 19.) $A\,\varphi^6 + B = a^6\,\varphi^6 + R\,\varphi^6 + B$ so $A\,\varphi^6 + B - a^6\,\varphi^6 = R\,\varphi^6 + B$. Subtract from both sides of this equation the second Subtrahend by Art. c',) and it becomes $A\,\varphi^6 + B - a^6\,\varphi^6 - 6\,a^5\,\varphi^5\,b - 15\,a^4\,\varphi^4\,b^2 - 20\,a^3\,\varphi^3\,b^3 - 15\,a^2\,\varphi^2\,b^4 - 6\,a\,\varphi\,b^5 - b^6 = R\,\varphi^6 + B - (6\,a^5\,\varphi^5\,b + 15\,a^4\,\varphi^4\,b^2 + 20\,a^3\,\varphi^3\,b^3 + 15\,a^2\,\varphi^2\,b^4 + 6\,a\,\varphi\,b^5 + b^6) = A\,\varphi^6 + B - (a^6\,\varphi^6 + 6\,a^5\,\varphi^5\,b + 15\,a^4\,\varphi^4\,b^2 + 20\,a^3\,\varphi^3\,b^3 + 15\,a^2\,\varphi^2\,b^4 + 6\,a\,\varphi\,b^5 + b^6) = (A\,\varphi^6 + B) - (a\,\varphi + b)^6 =$ by Par. 21) to $P - p^6 = R'$. Then since $R\,\varphi^6 + B$ is expounded by 102,571,800 and $6\,a^5\,\varphi^5\,b + 15\,a^4\,\varphi^4\,b^2 + 20\,a^3\,\varphi^3\,b^3 + 15\,a^2\,\varphi^2\,b^4 + 6\,a\,\varphi\,b^5 + b^6$ is expounded by 84,035,889 so $(R\,\varphi^6 + B) - (6\,a^5\,\varphi^5\,b + 15\,a^4\,\varphi^4\,b^2 + 20\,a^3\,\varphi^3\,b^3 + 15\,a^2\,\varphi^2\,b^4 + 6\,a\,\varphi\,b^5 + b^6)$ or $P - p^6$ or R' is expounded by $102{,}571{,}800 - 84{,}035{,}889 = 18{,}535{,}911$ the second Remainder.

(e′.) Since C is expounded by 758,593 and consists of 6 figures, so by Lemma 6,) 18,535,911,758,593 expounds $R'\,\varphi^6 + C$, and is the second Resolvend.

(f′.) Since $a\,\varphi + b$ or p is expounded by 23, so $p\,\varphi$ is expounded by 230 and $p^2\,\varphi^2$ or $\overline{p\,\varphi}|^2$ by 230^2 and $p^3\,\varphi^3$ or $\overline{p\,\varphi}|^3$ by 230^3, &c. hence $6\,p^5\,\varphi^5$

$+ 15\, p^4\, \varphi^4 + 20\, p^3\, \varphi^3 + 15\, p^2\, \varphi^2 + 6\, p\, \varphi + 1$ is expounded by $6 \cdot 230^5 + 15 \cdot 230^4 + 20 \cdot 230^3 + 15 \cdot 230^2 + 6 \cdot 230 + 1$, and since 4 substituted as directed, produces by the sum $6 \cdot 230^5 \cdot 4 + 15 \cdot 230^4 \cdot 4^2 + 20 \cdot 230^3 \cdot 4^3 + 15 \cdot 230^2 \cdot 4^4 + 6 \cdot 230 \cdot 4^5 + 4^6$ a number 16,134,619,913,216 smaller than 18,535,911,758,593 or $R' \varphi^6 + C$, and since 4 is the greatest number which will do so, so 4 expounds the c of the sum $6\, p^5\, \varphi^5\, c + 15\, p^4\, \varphi^4\, c^2 + 20\, p^3\, \varphi^3\, c^3 + 15\, p^2\, \varphi^2\, c^4 + 6\, p\, \varphi\, c^5 + c^6$ as by Par. 22.)

(b″.) Then 4, the third found figure of the Root, expounds c (Par. 23.) and since 23 expounds $a\, \varphi + b$ or p, and there is but one figure in c, so by Lem. 6.) $(a\, \varphi + b)\, \varphi + c$ or $p\, \varphi + c$ is expounded by 234. And since p' by Par. 24 $= p\varphi + c$ so p' is expounded by 234. And hence 234 is the highest approximate Root of $\overline{|A\varphi^6 + B|}\, \varphi^6 + C$ or $P\, \varphi^6 + C$ or P', or 166,571,800,758,593 the three first periods of the given number.

As is easily tried, for $234^6 = 164{,}170{,}508{,}913{,}216$, which is less, and $235^6 = 168{,}425{,}239{,}515{,}625$, which is greater than 166,571,800,758,593.

c″. Then 16,134,619,913,216, the third Subtrahend, expounds $6 p^5 \varphi^5 c + 15 p^4 \varphi^4 c^2 + 20 p^3 \varphi^3 c^3 + 15 p^2 \varphi^2 c^4 + 6 p \varphi c^5 + c^6$ by Par. 23.)

d″. Since by Par. 22) $P\, \varphi^6 + C = p^6\, \varphi^6 + R'\, \varphi^6 + C$ so $P\, \varphi^6 + C - p^6\, \varphi^6 = R'\, \varphi^6 + C$. Subtract from both sides of this equation the third Subtrahend by Art. *c″*). And it becomes $P\, \varphi^6 + C - p^6\, \varphi^6 - 6\, p^5\, \varphi^5\, c - 15\, p^4\, \varphi^4\, c^2 - 20\, p^3\, \varphi^3\, c^3 - 15\, p^2\, \varphi^2\, c^4 - 6\, p\, \varphi\, c^5 - c^6 = R'\, \varphi^6 + C - (6\, p^5\, \varphi^5\, c + 15\, p^4\, \varphi^4\, c^2 + 20\, p^3\, \varphi^3\, c^3 + 15\, p^2\, \varphi^2\, c^4 + 6\, p\, \varphi\, c^5 + c^6) = (P\, \varphi^6 + C) - (p\, \varphi + c)^6 =$ (by Par. 21.) $P' - p'^6 = R''$. Then since $R'\, \varphi^6 + C$ is expounded by 18,535,911,758,593, and $6\, p^5\, \varphi^5\, c + 15\, p^4\, \varphi^4\, c^2 + 20\, p^3\, \varphi^3\, c^3 + 15\, p^2\, \varphi^2\, c^4 + 6\, p\, \varphi\, c^5 + c^6$ is expounded by 16,134,619,913,216, so $R'\, \varphi^6 + C - (6\, p^5\, \varphi^5\, c + 15\, p^4\, \varphi^4\, c^2 + 20\, p^3\, \varphi^3\, c^3 + 15\, p^2\, \varphi^2\, c^4$

$+ 6\, p\, \varphi\, c^5 + c^6$) or $P' - p'^6$ or R'' is expounded by 18,535,911,758,593, — 16,134,619,913,216, or 2,401,291,845,377 the third Remainder.

And by a continuation of analogous reasoning, it will be found that d is expounded by 5, the fourth found figure of the Root.

$6\, p'^5\, \varphi^5\, d + 15\, p'^4\, \varphi^4\, d^2 + 20\, p'^3\, \varphi^3\, d^3 + 15\, p'^2\, \varphi^2\, d^4 + 6\, p'\, \varphi\, d^5 + d^6$ is expounded by 2,116,025,521,169,640,625, the fourth Subtrahend.

$p'\varphi + d$ or p'' by 2,345, and that is the approximate sixth Root of 166,571,800,758,593,887,308, the four first periods of the given number.

$P'' - p''^6$ is expounded by 285,266,324,208,246,683, the fourth Remainder or R'''.

e is expounded by 6, the fifth found figure of the Root.

$6\, p''^5 \varphi^5 e + 15 p''^4 \varphi^4 e^2 + 20\, p''^3 \varphi^3 e^3 + 15\, p''^2 \varphi^2 e^4 + 6\, p'' \varphi e^5 + e^6$ is expounded by 255,443,315,383,323,683,729,856, the fifth Subtrahend.

$p''\varphi + e$ or p''' by 23,456, and that is the approximate sixth Root of 166,571,800,758,593,887,308,296,025, the five first periods of the given number.

$P''' - p'''^6$ is expounded by 29,823,008,824,922,999,566,169, the fifth Remainder or R^{iv}.

f is expounded by 7, the sixth found figure of the Root.

$6\,p'''^5\,\varphi^5\,f + 15\,p'''^4\,\varphi^4 f^2 + 20\,p'''^3\,\varphi^3 f^3 + 15\,p'''^2\,\varphi^2 f^4 + 6\,p'''\,\varphi\,f^5 + f^6$ is expounded by 29,823,008,824,922,999,565,181,681,169, the sixth Subtrahend.

$p'''\,\varphi + f$ or p^{iv} by 234,567, and that is the approximate sixth Root of the given number, 166,571,800,758,593,887,308,296,025,335,490. That is $p^{\text{iv}} = m$.

$\text{P}^{\text{iv}} - p^{\text{iv}6}$ is expounded by 987,654,321 the last Remainder, and since by Par. 25). $\text{P}^{\text{iv}} = \text{M}$ so $\text{P}^{\text{iv}} - p^{\text{iv}6} = \text{R}^{\text{v}} \doteq \text{M} - m^6 \lesssim r$ of Par. 28.)

And it is evident this reasoning may be continued to any number of periods.

(35.) I now proceed in order to—

III. Exhibit this operation as directed by the Arabian Arithmeticians, and then explain its conformity to the original Demonstration. This operation occupies a much more extended space, and is delineated in the annexed Diagram.—(See Lithographized Figure.)

(36.) The outlines which constitute the upper part of this Diagram, and are there called the Rank of the Number, and contain the same figures as in the European Operation of Par. 31), are technically called by the Arabian Arithmeticians شكل منبري Shukloon Mimbureeoon, or Pulpit Diagram or Figure, from its fancied resemblance to the ascending steps which constitute a Mohammadan Pulpit. This term will perhaps sound oddly in European ears, but we shall be less inclined to deride the quaintness of

Arabian Operation,

for the Extraction of the Sixth Root, of the Number

166, 571, 800, 758, 593, 887, 308, 296, 025, 335, 490.

References to the Steps of the operation

Anabathroidal Diagram or Rank of the Number

h			2																		
	1	6	6																		
j		6	4						3												
j'	1	0	2	5	7	1	8	0	0												
ت		8	4	0	3	5	8	8	9						4						
j''		1	8	5	3	5	9	1	1	7	5	8	5	9	3						
ت'		1	6	1	3	4	6	1	9	9	1	3	2	1	6						5
j'''			2	4	0	1	2	9	1	8	4	5	3	7	7	8	8	7	3	0	8
ت''			2	1	1	6	0	2	5	5	2	1	1	6	9	6	4	0	0	2	5

Table of the Quadratics Circles or Crosshairs Stars & Second Terms of the Numbers

					2	9	8	2	3	0	0	8	8	2	4	9	2	2	9	9	9	5	6	5	1	8	1	6	8	1	1	6	9
																									9	8	7	6	5	4	3	2	1
						4	2	6	0	7	9	3	1	0	5	9	4	1	3	6	6	3	8	2	1	1	9	9	7	7	4	5	5
						4	2	6	0	7	4	7	6	9	4	9	0	8	3	3	4	6	0	7	3	8	1	9	8	5	0	4	2
										3	1	7	8	6	2	7	7	6	4	7	7	5	2	6	0	4	1	7	4	5	4	7	5
						4	2	6	0	4	2	9	8	3	2	1	3	1	8	5	7	0	8	0	7	4	0	2	4	0	1	0	7
										3	1	7	8	5	0	1	2	8	8	9	9	2	6	2	4	7	4	0	4	0	1	0	7
						4	2	6	0	1	1	1	9	8	2	0	0	2	9	5	7	8	1	8	2	6	5	6					
					4	2	6	0	1	1	1	9	8	2	0	0	2	9	5	7	8	1	8	2	6	5	6					
								2	7	2	3	3	9	2	2	8	6	8	9	6	4	2	2	7	6	8	0					
					4	2	5	7	3	8	8	5	8	9	7	2	2	0	6	1	3	9	5	4	9	7	5					
								2	7	2	2	4	6	3	4	6	9	1	2	3	8	9	5	4	9	7	6					
					4	2	5	4	6	6	6	1	2	6	2	5	2	9	3	7	5	0										
				4	2	5	4	6	6	6	1	2	6	2	5	2	9	3	7	5	0											
						2	2	6	1	5	0	8	3	9	1	3	6	5	6	2	5											
				4	2	3	2	0	5	1	0	4	2	3	3	4	2	8	1	2	5											
						2	2	5	5	0	8	1	3	7	9	5	3	6	1	2	5											
				4	2	0	9	5	0	0	2	2	8	5	4	4																
			4	2	0	9	5	0	0	2	2	8	5	4	4																	
				1	7	5	8	4	5	2	5	0	2	4	0																	
			4	0	3	3	6	5	4	9	7	8	3	0	4																	
				1	7	1	8	4	9	1	7	8	6	0	4																	
			3	8	6	1	8	0	5	8																						
		3	8	6	1	8	0	5	8																							
		1	0	6	0	6	1	9	5																							
		2	8	0	[illegible]																											
			8	[illegible]					3																							
		1	9	2																												
	1	9	2																													
	1	0	0																													
		3	2																													
											4	5	4	1	0	7	7	4	9	0	5	5	5	2	4	4	0	1	7	6	8	1	5
															1	8	0	0	8	3	7	3	3	4	8	4	9	4	9	8	8	9	0
											4	5	4	0	8	9	1	8	0	4	8	2	1	8	0	9	1	6	7	7	9	2	5
															1	8	0	0	7	9	0	8	9	4	8	8	1	1	1	5	0	4	4
											4	5	4	0	7	1	0	1	2	7	1	3	2	3	2	1	0	0	0	2	8	8	1
															1	8	0	0	7	5	6	4	5	5	3	9	0	2	1	2	8	8	1
											4	5	4	0	5	3	5	4	5	1	4	8	0	7	8	1	4	4	0				
										1	5	1	0	5	3	5	1	5	1	1	8	1	7	0	1	1	1	8					

Biquadrate or Second last Rank, or Third Rank of the Number

Rank of

[illegible]

…e or third last Rank or Fourth Rank of the Number

1	0 4 8 6 0
2	9 0 4 1 1
3	8 4 0 4 4
4	1 0 0 0 0 0
5	2 4 5 9 9 0
6	4 1 3 7 2 5
7	0 0 1 8 0 2 0 0 0 0 0 5 5 5
8	0 7 6 0 9 7 0 5 5 0 0 7 2 2
9	5 2 5 7 4 2 5 2 2 7 5 3 1 1
10	9 3 9 3 9 4 2 5 7 3 3 2 1 1 1
11	4 0 4 5 4 0 7 7 9 2 7 7 0 2 0
12	0 9 9 2 0 1 7 4 3 1 1 0
13	8 7 7 4 6 2 1 1 1 9 1 8 0 0 6 4 6 2 4 4
14	5 5 5 0 1 2 1 6 1 0 1 5 5 6 2 2 9 5 4 4
15	2 2 2 9 4 1 4 0 4 0 4 2 0 9 1 0 4 3 1 1
16	7 7 7 0 8 8 2 2 0 4 8 0 0 0
17	5 5 5 5 5 5 0 4 4 5 1 3 9 4
18	2 2 2 2 2 2 2 4 4 7 2 5 1 3
19	0 3 2 3 4 3 0 3 0 0 0 2 8 1 7 1
20	5 5 4 4 4 4 9 5 0 4 4 0 0
21	2 2 2 2 2 3 5 7 4 3 2 1 1
22	3 2 0 1 9 0 9 9 0
23	4 2 2 2 0 2 1 1 0
24	2 2 1 1 1
25	0 0 0 8
26	0 8 8 4
27	1

[illegible]

Rank of the Square or Fourth last Rank or Fifth R

5	5 0	6 4	7 7	8 9	9						
3	6 7	1 5	6 8	1 6	0						
3	7 5	7 8	6 1	6 5	5 0						
2	1 0	1 8	1 7	1 5	1 4						
6	5 1	5 5	5 0	5 5	5 0						
1	8 3	8 4	8 6	6 7	8 9						
5	9 5	9 5	9 5	9 5	9 5 0	0 0	4 6	6 8	2 6	6	
2	1	0	9	8	7 4	8 6	4 1	0 0	7 3	5	
5	3	3	2	2	2 0	3 6	3 3	3 6	2	2	5
5	5	5	5	5	5 9	4 4	4 0	4 6	4 4	4 7	
2	2	2	2	2	2 5	4 1	4 7	4 2	4 4	4 3	
8	8	8	8	8	8 7	8 9	8 0	8 5	8 3	8 3	
2	1	1	6	4	8 5	5 0	0 0	5 5	0 5	5	
5	5	5	5	4	4 7	2 5	0 5	7 7	3 2	2	
2	2	2	2	2	2 3	3 0	3 7	2 4	2 2	2 0	
8	8	8	8	8	8 5	0 5	0 4	0 4	0 4	0 4	
8	7 1	7 4	7 7	7 0	7 3						
4	4	3	2	2	1						
2	2	2	2	2	2 0	0 0					
8	8	8	8	8	8 4	0 4					
3	6 7										
1	5 5										
2	1										
8	8										

8

the Number	Rank of the Sa

2	5	8	1	4	7
0	9	8	8	7	6
4	3	3	3	3	3
7	7	7	7	7	7
8	0	0	0	0	0
4	4	4	4	4	4
1	1	1	1	1	1

6	0	4	8	2	5
3	3	2	1	1	0
7	7	7	7	7	7
0	0	0	0	0	0
4	4	4	4	4	4
1	1	1	1	1	1

0	5	0
7	6	6
0	0	0
4	4	4
1	1	1

2	6	6	
5	3	3	
5	0	5	5
5	9	5	3
7	9		9
	7		7

5	5	0	6	4	7	7	8	9	9
3	8	3	9	3	8	4	7	6	6
9	4	5	3	1	3	7	3	3	3 0
7		7		7		6		6	6

0	0	0	4 8	2 8	8 1
6	2	4	1 2	1	1

or First Rank

1404

1404	1400	1396	1392	1388	1384

138	135	132	129	126	123

12	10	8	6	4	2

the expression when we recollect how many of our own technical phrases, if literally translated would, to an Arab, appear equally worthy of ridicule. How would an Anatomist defend the Carpet of the Eye, the Boat and Moon bones of the Wrist, the greater and lesser Couriers of the Thigh, the Bedpost processes of the Scull, and the dancing Net of the Brain; and innumerable other names equally fantastic. Nor is even the severe Science of which we are now treating, quite exempt from this censure. What shall we say of the Forefinger of a Power, or the Chain of a Root?

(37.) Then divide the given number into Periods by dots, as directed in Par. 32 Art. *a*). Draw a Pulpit Diagram, ascending to the left hand, having as many steps as there are periods in the given number. From each step draw longitudinal lines down the page, so as to have in each step a place for each figure of the corresponding period, between the interstices of each two longitudinal lines. Write the figures of each period regularly in the highest part of each of these interstices, in the several corresponding steps, and immediately under the line which constitutes the upper boundary of the Pulpit. Produce these longitudinal lines as far as convenient. Then divide the whole figure thus constituted by cross lines into as many divisions, nearly equal, as there are units in the Index of the Root to be extracted.

(38.) That is in the present case, make a Pulpit Diagram of 6 steps, divide the highest and left hand step by longitudinal lines into 3 interstitial spaces, in which write the 3 figures of the first period, as in Par. 31). Then divide each lower step into 6 interstitial spaces, in which write the figures of their corresponding periods. Divide the whole figure by cross lines into 6 divisions of nearly equal length. For distinction I have, in the example, made the cross lines, which are the boundaries of these divisions, double. Call the lowest of these divisions the Rank of the Latus,

or first Rank; the next upper division the Rank of the Square; the nex the Rank of the Cube; the next the Rank of the Biquadrate; the next th Rank of the Quadratus Cubi; and the next, which constitutes the Pulpi Diagram, call the Rank of the Number. This I have divided from th other Ranks by a triple cross line. Again, in reverse order, call the Rank of the Quadratus Cubi, also the last Rank or second Rank of the Num ber; and call the Rank of the Biquadrate, also the second last Rank o third Rank of the Number; and call the Rank of the Cube, also the thir last Rank or fourth Rank of the Number; and call the Rank of th Square, also the fourth last Rank or fifth Rank of the Number;

Before proceeding farther, two phrases are yet to be explained.

(39.) When, in this operation, one number is said to be written oppo site to another, it is hereby meant, that whatever be the distance betwee these two numbers, yet with respect to the interstices formed by th whole length of the longitudinal lines, the units of the one number ar written in the same interstice as the units of the other, the tens of th one number in the same interstice as the tens of the other, the hundred of the one number in the same interstice as the hundreds of the other, an so on; all the higher corresponding degrees of the two numbers bein respectively in the same interstice.

Thus in the Rank of the Biquadrate, at the letter of reference χ', th number 986,144,576 is written opposite the number 18,535,911,758,593 which is at the letter i' in the Rank of the number or Pulpit Diagram for 6, the units of the first number is written in the same interstice of th longitudinal lines as 3, the units of the second; and the tens of both num- bers, viz. 7 and 9, are in the same interstice to the left of the units, and the hundreds of both numbers, viz. 5, and 5, are in the same interstice to the left of the tens, and so of the thousands 4 and 8, &c.

(40). When a number is said to be transferred any number of places to the right hand, it is hereby meant that a copy of this number should be made immediately above itself with this condition, that counting from the units of the number said to be transferred as many interstices to the right hand as the number of places which it is said to be transferred, the units of the transferred number are to be written in the last or most right hand of these interstices, and the tens of the transferred number are to be written in the interstice immediately to the left hand of that last, and the hundreds in the interstice next to the left of the tens, and the thousands in the interstice next to that, and so on through all the degrees, so that each degree of the number in question should be copied as many interstices to the right hand, as the number of places which it is said to be transferred.

Thus in the Rank of the Quadratus Cubi at the letters t and u, the number 192 is transferred one place to the right hand, for the unit 2 is copied above it one interstice to the right hand of the original 2, the tens 9 is copied one interstice to the right hand of the original 9, and so of 1.

And in the Rank of the Biquadrate at the letter β' and γ' the number 4,197,615 is transferred 2 places to the right hand, for the unit 5 is copied above it two interstices to the right hand of the original 5, the tens 1 is copied two interstices to the right hand of the original 1, the hundreds 6 is copied two interstices to the right of the original 6, and so of 7, 9, 1, and 4.

And in the Rank of the Cube at the letter θ'' and ι'' the number 256,258,080 is for similar reasons said to be transferred 3 places to the right hand, and so in the Rank of the Square at the letter μ'' and ν'' 821,340 is transferred 4 places, and in the Rank of the Latus at the letter π^{iv} and ϱ^{iv} 140,736 is transferred 5 places to the right hand.

(41.) I now proceed with the Arabian Rule.

Seek the greatest number with the following conditions—

1. That if it be written at the bottom of the Rank of the Latus, that is completely at the bottom of the whole figure and opposite the first period, that is in the same interstice as 6 the units of 166 Par. 38.)

2. And if it be multiplied into itself, and the product written in the Rank of the Square again opposite the first period.

3. And if it be again multiplied in this product, and the second product written in the Rank of Cube again opposite the first period.

4. And if it be again multiplied into this second product, and the third product written in the Rank of the Biquadrate again opposite the first period.

5. And if it be again multiplied into this third product, and the fourth product written in the Rank of the Quadratus Cubi again opposite the first period.

6. And if it be again multiplied into this fourth product that the fifth product be not greater than the first period of the given number.

Then 2 will be found the number answering these conditions, for

a. Write 2 in the bottom of the Rank of the Latus, as by Art. 1.)

b. Multiply this 2 into itself, and write the product 4 in the Rank of the Square, as by Art. 2.)

c. Multiply the 2 again into this 4, and write the product 8 in the Rank of the Cube, as by Art. 3.)

d. Multiply the 2 again into this 8, and write the product 16 in the Rank of the Biquadrate, as by Art. 4.)

e. Multiply the 2 again into this 16, and write the product 32 in the Rank of the Quadratus Cubi, as by Art. 5.)

f. Multiply the 2 again into this 32, and the product is 64, which is less than 166, as by Art. 6.)

And 2 is the highest number which will answer these conditions. For let 3 be substituted in these operations and they will successively become $3 \times 3 = 9$, $9 \times 3 = 27$, $27 \times 3 = 81$, $81 \times 3 = 243$, $243 \times 3 = 729$, which last product is greater than 166.

g. Call this last product 64, which answers the condition, the first Subtrahend, write it opposite to and immediately under 166, the first period.

h. Write the found figure 2 above 6, the units of the first period, and exterior to and immediately above the Pulpit, or as it may be called the Anabathroidal Diagram. This is the first figure of the Root.

i. Subtract the first Subtrahend from the first period, and 102 is the first Remaider.

---

j. Write 102, the first Remainder, on a line with the figures of the second period in the next descending right hand step of the Pulpit Diagram, so as to form the number 102,571,800. This is the first Resolvend.

k. Add 2, the first found figure of the Root, to itself, and write the sum 4 in the Rank of the Latus opposite to and immediately above the 2 formerly written there by Art. *b*). This 4 is now the upper number in the Rank of the Latus.

l. Multiply 2, the first found figure of the Root, into this 4, and write the product 8 in the Rank of the Square opposite to and immediately above the 4 formerly written there by Art. *c*).

m. Add together in the Rank of the Square this 8 and 4, and write the sum 12 opposite to and immediately above them. This 12 is now the upper number in the Rank of the Square.

n. Multiply 2, the first found figure of the Root, into this 12, and write the product 24 in the Rank of the Cube opposite to and immediately above the 8 formerly written there by Art. *d*).

p. Add together in the Rank of the Cube this 24 and 8, and write the sum 32 opposite to and immediately above them. This 32 is now the upper number in the Rank of the Cube.

q. Multiply 2, the first found figure of the Root, into this 32, and write the product 64 in the Rank of the Biquadrate opposite to and immediately above the 16, formerly written there by Art. *e*.)

r. Add together in the Rank of the Biquadrate this 64 and 16, and write the sum 80 opposite to and immediately above them. This 80 is now the upper number in the Rank of the Biquadrate.

s. Multiply 2, the first found figure of the Root, into this 80, and write the product 160 in the Rank of the Quadratus Cubi opposite to and immediately above the 32 formerly written there by Art. *f*).

t. Add together in the Rank of the Quadratus Cubi this 160 and 32, and write the sum 192 opposite to and immediately above them.

u. Transfer this 192 one place to the right hand. This 192 so transferred is now the upper number in the Rank of the Quadratus Cubi.

---

v. Add 2, the first found figure of the Root to 4, the upper number in the Rank of the Latus by Art. *k*, and write the sum 6 opposite to and immediately above it. This 6 is now the upper number in the Rank of the Latus.

w. Multiply 2, the first found figure of the Root into this 6, and write the product 12 in the Rank of the Square opposite to and immediately above 12, the upper number in that Rank by Art. *m*.

x. Add together in the Rank of the Square this 12 and 12, and write the sum 24 opposite to and immediately above them. This 24 is now the upper number in the Rank of the Square.

y. Multiply 2, the first found figure of the Root into this 24, and write the product 48 in the Rank of the Cube opposite to and immediately above 32, the upper number in that Rank by Art. *p*.

z. Add together in the Rank of the Cube this 48 and 32, and write the Sum 80 opposite to and immediately above them. This 80 is now the upper number in the Rank of the Cube.

α. Multiply 2, the first found figure of the Root into this 80, and write the product 160 in the Rank of the Biquadrate opposite to and immediately above 80, the upper number in that Rank by Art. *r*.

β. Add together in the Rank of the Biquadrate this 160 and 80, and write the sum 240 opposite to and immediately above them.

γ. Transfer this 240 to the right hand 2 places. This 240 so transferred is now the upper number in the Rank of the Biquadrate.

δ. Add 2, the first found figure of the Root to 6, the upper number in the Rank of the Latus by Art. *v*, and write the sum 8 opposite to and immediately above it. This 8 is now the upper number in the Rank of the Latus.

ε. Multiply 2, the first found figure of the Root into this 8, and write the product 16 in the Rank of the Square opposite to and immediately above 24, the upper number in that Rank by Art. *x*.

ζ. Add together in the Rank of the Square this 16 and 24, and write the sum 40 opposite to and immediately above them. This 40 is now the upper number in the Rank of the Square.

η. Multiply 2, the first found figure of the Root into this 40, and write the product 80 in the Rank of the Cube opposite to and immediately above 80, the upper number in that Rank by Art *z*.

θ. Add together in the Rank of the Cube this 80 and 80, and write the sum 160 opposite to and immediately above them.

ι. Transfer this 160 to the right hand 3 places. This 160 so transferred is now the upper number in the Rank of the Cube.

κ. Add 2, the first found figure of the Root to 8, the upper number in the Rank of the Latus by Art. δ) and write the sum 10 opposite to and

immediately above it. This 10 is now the upper number in the Rank of the Latus.

λ. Multiply 2, the first found figure of the Root into this 10, and write the product 20 in the Rank of the Square opposite to and immediately above 40, the upper number in that Rank.

μ. Add together in the Rank of the Square this 20 and 40, and write the sum 60 opposite to and immediately above them.

ν. Transfer this 60 to the right hand 4 places. This 60 so transferred is now the upper number in the Rank of the Square.

ξ. Add 2, the first found figure of the Root to 10, the upper number in the Rank of the Latus Art. κ) and write the sum 12 opposite to and immediately above the 10.

π. Transfer this 12 to the right hand 5 places. This 12 so transferred is now the upper number in the Rank of the Latus.

Then seek the greatest number with the following condition—

1. That if this sought number be written in the interstice to the right hand of 12, the upper number by Art. π in the Rank of the Latus.

2. And this sought number be multiplied into the whole figures now uppermost in the Rank of the Latus, and the product written in the Rank of the Square opposite 571,800, the second period of the given number, which stands in the Rank of the number or Pulpit Diagram, and immediately above 60, the upper number by Art. ν in that Rank.

3. And the figures of this product and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

4. And the sought number be multiplied into this sum, and the product written in the Rank of the Cube opposite to 571,800, the second period as before, and immediately above 160, the upper number by Art. ι in that Rank.

5. And the figures of this product and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

6. And the sought number be multiplied into this sum and the product written in the Rank of the Biquadrate opposite to 571,800, the second period as before, and immediately above 240, the upper number by Art. γ) in that Rank.

7. And the figures of this product and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

8. And the sought number be multiplied into this sum, and the product be written in the Rank of the Quadratus Cubi opposite to 571,800, the second period as before, and immediately above 192, the upper number by Art. u in that Rank.

9. And the figures of this product and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

10. And the sought number be multiplied into this sum, this product should not be greater than 102,571,800, the first Resolvend by Art. *j*.

Then 3 will be found the number answering these conditions. For—

ϱ. Write 3 in the interstice to the right hand of 12, the upper number by Art. *π*) in the Rank of the Latus, and it becomes 123, and is now the upper number in that Rank.

σ. Multiply the found 3 into this 123, and write the product 369 in the Rank of the Square opposite to 571,800, the second period, and immediately above 60, the upper number by Art. *ν*) in that Rank.

τ. Add the figures in this situation, 369
60

and it becomes 6,369. Write this sum opposite to and immediately above 369, and this 6,369 is now the upper number in the Rank of the Square.

υ. Multiply this found 3 into this 6,369, and write the product 19,107 in the Rank of the Cube opposite to 571,800, the second period, and immediately above 160, the upper number by Art. *ι*) in that Rank.

Add the figures in this situation, 19,107
160

and it becomes 179,107. Write this sum opposite to and immediately above 19,107, and this 179,107 is now the upper number in the Rank of the Cube.

χ. Multiply the found 3 into 179,107, and write the product 537,321 in the Rank of the Biquadrate opposite to 571,800, the second period, and immediately above 240, the upper number by Art. *γ* in that Rank.

ψ. Add the figures in this situation, 537,321
240

and it becomes 2,937,321. Write this sum opposite to and immediately above 537,321, and this 2,937,321 is now the upper number in the Rank of the Biquadrate.

ω. Multiply this found 3 into this 2,937,321, and write the product 8,811,963 in the Rank of the Quadratus Cubi opposite to 571,800, the second period, and immediately above 192, the upper number by Art. *u* in that Rank.

ا. Add the figures in this situation, 8,811,963
192

And it becomes . . 28,011,963. Write this sum opposite to and immediately above 8,811,963, and this 28,011,963 is now the upper number in the Rank of the Quadratus Cubi.

ب. Multiply this found 3 into this 28,011,963, and the product is 84,035,889, which is less than 102,571,800, the first Resolvend by Art. *j*.

And 3 is the highest number which will answer these conditions. For let 4 be substituted in these operations, they will successively become—

The number in ϱ	124.	The product in σ . . 124 × 4 =	496
	496		6,496
	60		4
The sum in τ	6,496.	The product in υ	25,984
	25,984		185,984
	160		4

The sum in φ	185,984.	The product in χ	743,936
	743,936		3,143,936
	240		4
The sum in ψ	3,143,936.	The product in ω ..	12,575,744
	12,575,744		31,775,744
	192		4
The sum in ا	31,775,744.	The product in ب ..	127,102,976

which last product is greater than 102,571,800.

ب. Write the found figure 3, which answers the conditions above, the units of the second period 571,800, and exterior to and immediately above the Pulpit Diagram. This is the second found figure of the Root

ت. Call this last product 84,035,889, which answers the conditions the second Subtrahend, write it opposite to and immediately under 102,571,800, the first Resolvend.

ث. Subtract 84,035,889, the second Subtrahend, from 102,571,800, the first Resolvend, and 18,535,911 is the second Remainder.

---

j'. Write 18,535,911, the second Remainder, on a line with the figures of the third Period in the next descending right hand step of the Pulpit Diagram, so as to form the number 18,535,911,758,593. This is the second Resolvend.

k'. Add 3, the second found figure of the Root, to 123, the upper number in the Rank of the Latus by Art. ϱ), and write the sum 126 in the

Rank of the Latus, opposite to and immediately above it. This 126 is now the upper number in the Rank of the Latus.

l'. Multiply 3, the second found figure of the Root, into this 126, and write the product 378 in the Rank of the Square opposite to and immediately above 6,369, the upper number in that Rank by Art. τ).

m'. Add together in the Rank of the Square this 378 and 6,369, and write the sum 6,747 opposite to and immediately above them. This 6,747 is now the upper number in the Rank of the Square.

n'. Multiply 3, the second found figure of the Root, into this 6,747, and write the product 20,241 in the Rank of the Cube opposite to and immediately above 179,107, the upper number in the Rank by Art. φ.

p'. Add together in the Rank of the Cube this 20,241 and 179,107, and write the sum 199,348 opposite to and immediately above them. This 199,348 is now the upper number in the Rank of the Cube.

q'. Multiply 3, the second found figure of the Root, into this 199,348, and write the product 598,044 in the Rank of the Biquadrate opposite to and immediately above 2,937,321, the upper number in that Rank by Art. ψ.

r'. Add together in the Rank of the Biquadrate this 598,044 and 2,937,321, and write the sum 3,535,365 opposite to and immediately above them. This 3,535,365 is now the upper number in the Rank of the Biquadrate.

s'. Multiply 3, the second found figure of the Root into this 3,535,365, and write the product 10,606,095 in the Rank of the Quadratus Cubi,

opposite to and immediately above 28,011,963, the upper number in that Rank by Art.).

t'. Add together in the Rank of the Quadratus Cubi this 10,606,095 and 28,011,963, and write the sum 38,618,058 opposite to and immediately above them.

u'. Transfer this 38,618,058 to the right hand one place. And this 38,618,058 so transferred, is now the upper number in the Rank of the Quadratus Cubi.

---

v'. Add 3, the second found figure of the Root, to 126, the upper number in the row of the Latus by Art. *k'*, and write the sum 129 opposite to and immediately above it. This 129 is now the upper number in the Rank of the Latus.

w'. Multiply 3, the second found figure of the Root, into this 129, and write the product 387 in the Rank of the Square opposite to and immediately above 6,747, the upper number in that Rank by Art. *m'*.

x'. Add together in the Rank of the Square this 387 and 6,747, and write the sum 7,134 opposite to and immediately above them. This 7,134 is now the upper number in the Rank of the Square.

y'. Multiply 3, the second found figure of the Root, into 7,134, and write the product 21,402 in the Rank of the Cube opposite to immediately above 199,348, the upper number in that Rank by Art. *p'*.

z'. Add together in the Rank of the Cube this 21,402 and 199,348, and write the sum 220,750 opposite to and immediately above them. This 220,750 is now the upper number in the Rank of the Cube.

α'. Multiply 3, the second found figure of the Root, into this 220,750, and write the product 662,250 in the Rank of the Biquadrate opposite to and immediately above 3,535,365, the upper number in that Rank by Art. r'.

β'. Add together in the Rank of the Biquadrate this 662,250 and 3,535,365, and write the sum 4,197,615 opposite to and immediately above them.

γ'. Transfer this 4,197,615 to the right hand two places. This 4,197,615 so transferred, is now the upper number in the Rank of the Biquadrate.

δ'. Add 3, the second found figure of the Root, to 129, the upper number in the Rank of the Latus by Art. v', and write the sum 132 opposite to and immediately above it. This 132 is now the upper number in the Rank of the Latus.

ε'. Multiply 3, the second found figure of the Root, into this 132, and write the product 396 in the Rank of the Square opposite to and immediately above 7,134, the upper number in that Rank by Art. x'.

ζ'. Add together in the Rank of the Square this 396 and 7,134, and write the sum 7,530 opposite to and immediately above them. This 7,530 is now the upper number in the Rank of the Square.

η'. Multiply 3, the second found figure of the Root, into this 7,530, and write the product 22,590 in the Rank of the Cube opposite to and immediately above 220,750, the upper number in that Rank by Art. z'.

δ′. Add together in the Rank of the Cube this 22,590 and 220,750, and write the sum 243,340 opposite to and immediately above them.

ι′. Transfer this 243,340 to the right hand three places. This 243,340 so transferred, is now the upper number in the Rank of the Cube.

κ′. Add 3, the second found figure of the Root, to 132, the upper number in the Rank of the Latus by Art. δ′,) and write the sum 135 opposite to and immediately above it. This 135 is now the upper number in the Rank of the Latus.

λ′. Multiply 3, the second found figure of the Root, into this 135, and write the product 405 in the Rank of the Square opposite to and immediately above 7,530, the upper number in that Rank by Art. ε′.)

μ′. Add together in the Rank of the Square this 405 and 7,530, and write the sum 7,935 opposite to and immediately above them.

ν′. Transfer this 7,935 to the right hand four places. This 7,935 so transferred, is now the upper number in the Rank of the Square.

ξ′. Add 3, the second found figure of the Root, to 135, the upper number in the Rank of the Latus by Art. κ′,) and write the sum 138 opposite to and immediately above the 135.

ο′. Transfer this 138 to the right hand five places. This 138 so transferred, is now the upper number in the the Rank of the Latus.

Then seek the greatest number with the following conditions—

1′. That if this sought number be written in the interstice to the right hand of 138, the upper number by Art. ο′ in the Rank of the Latus.

2′. And the sought number be multiplied into the whole figures now uppermost in the Rank of the Latus, and the product written in the Rank of the Square opposite 758,593, the third period of the given number, which stands in the Rank of the number, or Pulpit Diagram, and immediately above 7,935, the upper number by Art. *i′* in that Rank.

3′. And the figures of this product, and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

4′. And the sought number be multiplied into this sum, and the product written in the Rank of the Cube opposite to 758,593, the third period as before and immediately above 243,340, the upper number by Art. *l′* in that Rank.

5′. And the figures of this product, and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

6′. And the sought number be multiplied into this sum, and the product written in the Rank of the Biquadrate opposite to 758,593, the third period as before and immediately above 4,197,615, the upper number by Art. *γ′*,) in that Rank.

7′. And the figures of this product, and that number be in this situation added together, and the sum written opposite to and immediately above the product.

8′. And the sought number be multiplied into this sum, and the product written in the Rank of the Quadratus Cubi opposite to 758,593, the third period as before and immediately above 38,618,058, the upper number by Art. *u′*,) in that Rank.

9′. And the figures of the product, and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

10′. And the sought number be multiplied into this sum, the product should not be greater than 18,535,911,758,593, the second Resolvend by Art. *j*′.

Then 4 will be found the number answering these conditions, for—

ϱ′. Write 4 in the interstice to the right hand of 138, the upper number by Art. *π*′) in the Rank of the Latus, and it becomes 1,384, and is now the upper number in that Rank.

σ′. Multiply the found 4 into this 1,384, and write the product 5,536 in the Rank of the Square opposite to 758,593, the third period, and immediately above 7,935, the upper number by Art. *ν*′ in that Rank.

τ′. Add the figures in this situation, 5,536
7935

And it becomes .... 799,036. Write this sum opposite to and immediately above 5,536, and this 799,036 is now the upper number in the Rank of the Square.

υ′. Multiply this found 4 into this 799,036, and write the product 3,196,144 in the Rank of the Cube, opposite to 758,593, the third period, and immediately above 243,340, the upper number by Art. *ι*′ in that Rank.

φ′. Add the figures in this situation, 3,196,144
243,340

And it becomes ... 246,536,144. Write this sum opposite to and immediately above 3,196,144, and this 246,536,144 is now the upper number in the Rank of the Cube.

ت'. Multiply this found 4 into this 246,536,144, and write the product 986,144,576 in the Rank of the Biquadrate, opposite to 758,593, the third period, and immediately above 4,197,615, the upper number by Art. γ' in the Rank of the Biquadrate.

ث'. Add the figures in this situation, 986,144,576
41,976,15

And it becomes . . . 42,962,294,576. Write this sum opposite to and immediately above 986,144,576, and this 42,962,294,576 is now the upper number in the Rank of the Biquadrate.

ج'. Multiply this found 4 into this 42,962,294,576, and write the product 171,849,178,304 in the Rank of the Quadratus Cubi, opposite to 758,593, the third period, and immediately above 38,618,058, the upper number by Art. u' in that Rank.

ح'. Add the figures in this situation, 171,849,178,304
3,861,805,8

And it becomes . . 4,033,654,978,304. Write this sum opposite to 758,593, the third period, and immediately above 171,849,178,304, and this 4,033,654,978,304 is now the upper number in the Rank of the Quadratus Cubi.

خ'. Multiply this found 4 into this 4,033,654,978,304, and the product is 16,134,619,913,216, which is less than 18,535,911,758,593, the second Resolvend by Art. j'.

And 4 is the highest number which will answer these conditions.

For let 5 be substituted in these operations, and they will become—

The number in ϱ′	1,385.	The product in σ′ ..	1,385 × 5 = 6,925
	6,925		800,425
	793,5		5
The sum in τ′	800,425.	The product in υ′	4,002,125
	4,002,125		247,342,125
	243,340		5
The sum in φ′	247,342,125.	The product in χ′	1,236,710,625
	1,236,710,625		43,212,860,625
	41,976,15		5
The sum in ψ′	43,212,860,625.	The product in ω′ ..	216,064,303,125
	216,064,303,125		4,077,870,103,125
	3,861,805,8		5
The sum in ا′ ..	4,077,870,103,125.	The product in ب′ ..	20,389,350,515,625

which last product is greater than 18,535,911,758,593.

ب′. Write the found figure 4, which answers the conditions above 4, the units of the third period 758,593, and exterior to and immediately above the Pulpit Diagram. This is the third found figure of the Root.

ت′. Call this last product 16,134,619,913,216, which answers the conditions the third Subtrahend, and write it opposite to and immediately under 18,535,911,758,593, the second Resolvend.

ث'. Subtract 16,134,619,913,216, the third Subtrahend, from 18,535,911,758,593, the second Resolvend, and 2,401,291,845,377 is the third Remainder.

And proceed analogously through all the following Periods of the given number:

Thus—

j''. Write the last Resolvend on a line with the figures of the next Period in the next descending right hand step of the Pulpit Diagram. These whole figures are the next Resolvend.

k''. Add the last found figure of the Root to the upper number in the Rank of the Latus, and write the sum opposite to and immediately above it. This sum is now the upper number in the Rank of the Latus.

l''. Multiply the last found figure of the Root into this sum, and write the product in the Rank of the Square opposite to and immediately above the upper number in that Rank.

m''. Add together in the Rank of the Square this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Square.

n''. Multiply the last found figure of the Root into this sum, and write the product in the Rank of the Cube opposite to and immediately above the upper number in that Rank.

p''. Add together in the Rank of the Cube this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Cube.

q''. Multiply the last found figure of the Root into this sum and write the product in the Rank of the Biquadrate opposite to and immediately above the upper number in that Rank.

r''. Add together in the Rank of the Biquadrate this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Biquadrate.

s''. Multiply the last found figure of the Root into this sum and write the product in the Rank of the Quadratus Cubi opposite to and immediately above the upper number in that Rank.

t''. Add together in the Rank of the Quadratus Cubi this product and that upper number, and write the sum opposite to and immediately above them.

u''. Transfer this last sum to the right hand one place. This sum so transferred is now the upper number in the Rank of the Quadratus Cubi.

---

v''. Add the last found figure of the Root to the upper number in the Rank of the Latus, and write the sum opposite to and immediately above it. This sum is now the upper number in the Rank of the Latus.

w''. Multiply the last found figure of the Root into this sum, and write the product in the Rank of the Square opposite to and immediately above the upper number in that Rank.

x''. Add together in the Rank of the Square this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Square.

y''. Multiply the last found figure of the Root into this sum and write the product in the Rank of the Cube opposite to and immediately above the upper number in that Rank.

z''. Add together in the Rank of the Cube this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Cube.

α''. Multiply the last found figure of the Root into this sum, and write the product in the Rank of the Biquadrate opposite to and immediately above the upper number in that Rank.

β''. Add together in the Rank of the Biquadrate this product and that upper number, and write the sum opposite to and immediately above them.

γ''. Transfer this last sum to the right hand two places. This sum so transferred is now the upper number in the Rank of the Biquadrate.

δ''. Add the last found figure of the Root to the upper number in the Rank of the Latus, and write the sum opposite to and immediately above it. This sum is now the upper number in the Rank of the Latus.

ε''. Multiply the last found figure of the Root into this sum and write the product in the Rank of the Square opposite to and immediately above the upper number in that Rank.

ϱ''. Add together in the Rank of the Square this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Square.

η''. Multiply the last found figure of the Root into this sum and write the product in the Rank of the Cube opposite to and immediately above the upper number in that Rank.

θ''. Add together in the Rank of the Cube this product and that upper number, and write the sum opposite to and immediately above them.

ι''. Transfer this last sum to the right hand three places. This sum so transferred is now the upper number in the Rank of the Cube.

η''. Add the last found figure of the Root to the upper number in the Rank of the Latus, and write the sum opposite to and immediately above it. This sum is now the upper number in the Rank of the Latus.

χ''. Multiply the last found figure of the Root into this sum, and write the product in the Rank of the Square opposite to and immediately above the upper number in that Rank.

μ''. Add together in the Rank of the Square this product and that upper number, and write the sum opposite to and immediately above them.

ν″. Transfer this last sum to the right hand 4 places. This sum so transferred is now the upper number in the Rank of the Square.

ξ″. Add the last found figure of the Root to the upper number in the Rank of the Latus, and write the sum opposite to and immediately above it.

π″. Transfer this sum to the right hand 5 places. This sum so transferred is now the upper number in the Rank of the Latus.

Then seek the greatest number with the following conditions:

ϱ″. That if this sought number be written in the interstice to the right hand of the upper number in the Rank of the Latus.

σ″. And this sought number be multiplied into the whole figures now uppermost in the Rank of the Latus, and the product written in the Rank of the Square opposite to the next period of the given number, which stands in the Rank of the number, or Pulpit Diagram, and immediately above the upper number in the Rank of the Square.

τ″. And the figures of this product and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

υ″. And the sought number be multiplied into this sum, and the product written in the Rank of the Cube opposite to the next period and immediately above the upper number in that Rank.

φ″. And the figures of this product and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

χ″. And the sought number be multiplied into this sum, and the product written in the Rank of the Biquadrate opposite to the next period and immediately above the upper number in that Rank.

ψ″. And the figures of this product and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

ω″. And the sought number be multiplied into this sum, and the product written in the Rank of the Quadratus Cubi opposite to the next period and immediately above the upper number in that Rank.

ا″. And the figures of this product and that upper number be in this situation added together, and the sum written opposite to and immediately above the product.

ب″. And the sought number be multiplied into this sum, then the product shall not be greater than the last Resolvend.

پ″. Then write the found number which answers these conditions above the units of the next period, and exterior to and immediately above the Pulpit Diagram. This is the next found figure of the Root.

ت″. Call the last product which answers these conditions the next Subtrahend, write it opposite to and immediately under the last Resolvend.

ث″. Subtract this last found Subtrahend from the last Resolvend, and the result is the next Remainder.

And by this circle of operation there will successively be found—

For the 4th period

u″. The upper number transferred in the Rank of the Quadratus Cubi = 4,209,500,228,544.

γ″. The upper number transferred in the Rank of the Biquadrate = 44,973,293,040.

ι″. The upper number transferred in the Rank of the Cube = 256,258,080.

ν″. The upper number transferred in the Rank of the Square = 821,340.

π″. The upper number transferred in the Rank of the Latus = 1,404.

ب″. The sought number or fourth figure of the Root = 5.

ت″. The fourth Subtrahend = 2,116,025,521,169,640,625.

ث″. The fourth Remainder = 285,266,324,208,246,683.

For the 5th period

u‴. The upper number transferred in the Rank of the Quadratus Cubi = 425,466,612,625,293,750.

γ'''. The upper number transferred in the Rank of the Biquadrate = 453,589,139,259,375.

ι'''. The upper number transferred in the Rank of the Cube = 257,904,272,500.

ν'''. The upper number transferred in the Rank of the Square = 82,485,375.

π'''. The upper number transferred in the Rank of the Latus = 14,070.

ب'''. The sought number or fifth figure of the Root = 6.

ت'''. The fifth Subtrahend = 255,443,315,383,323,683,729,856.

ث'''. The fifth Remainder = 29,823,008,824,922,999,566,169.

For the 6th and last Period

u^{iv}. The upper number transferred in the Rank of the Quadratus Gubi = 42,601,119,820,029,578,182,656.

γ^{iv}. The upper number transferred in the Rank of the Biquadrate = 4,540,535,451,486,781,440.

ι^{iv}. The upper number transferred in the Rank of the Cube = 258,102, 288,056,320.

ν^{iv}. The upper number transferred in the Rank of the Square = 8,252,759,040.

π^{iv}. The upper number transferred in the Rank of the Latus = 140,736.

پ^{iv}. The sought number or sixth figure of the Root = 7.

ت^{iv}. The sixth Subtrahend = 29,823,008,824,922,999,565,181,681,169.

ث^{iv}. The sixth and last Remainder = 987,654,321.

Hence then the integral approximate Root of the given number is 234,567, and the last Remainder 987,654,321 is the Numerator of a Fraction, which is to be added to the integral Root, so as to afford a nearer approximate to truth. And the Denominator of this Fraction is found by the following process—

ج. Add the last figure of the Root to the upper number in the Rank of the Latus, and write the sum opposite to and immediately above it. This sum is now the upper number in the Rank of the Latus.

چ. Multiply the last figure of the Root into this sum, and write the product in the Rank of the Square opposite to and immediately above the upper number in that Rank.

ح. Add together in the Rank of the Square this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Square.

خ. Multiply the last figure of the Root into this sum, and write the product in the Rank of the Cube opposite to and immediately above the upper number in that Rank.

ه. Add together in the Rank of the Cube this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Cube.

ة. Multiply the last figure of the Root into this sum, and write the product in the Rank of the Biquadrate opposite to and immediately above the upper number in that Rank.

ر. Add together in the Rank of the Biquadrate this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Biquadrate.

ز. Multiply the last figure of the Root into this sum, and write the product in the Rank of the Quadratus Cubi opposite to and immediately above the upper number in that Rank.

س. Add together in the Rank of the Quadratus Cubi this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Quadratus Cubi.

And these operations are analogous to those from *k″* to *t″*.

ش. Add the last figure of the Root to the upper number in the Rank of the Latus, and write the sum opposite to and immediately above it. This sum is now the upper number in the Rank of the Latus.

ص. Multiply the last figure of the Root into this sum, and write the product in the Rank of the Square opposite to and immediately above the upper number in that Rank.

ض. Add together in the Rank of the Square this product and that upper number; and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Square.

ظ. Multiply the last figure of the Root into this sum, and write the product in the Rank of the Cube opposite to and immediately above the upper number in that Rank.

ظ. Add together in the Rank of the Cube this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Cube.

ع. Multiply the last figure of the Root into this sum, and write the product in the Rank of the Biquadrate opposite to and immediately above the upper number in that Rank.

غ. Add together in the Rank of the Biquadrate this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Biquadrate.

And these operations are analogous to those from υ'' to β''.

ف. Add the last figure of the Root to the upper number in the Rank of the Latus, and write the sum opposite to and immediately above it. This sum is now the upper number in the Rank of the Latus.

ق. Multiply the last figure of the Root into this sum, and write the product in the Rank of the Square opposite to and immediately above the upper number in that Rank.

ک. Add together in the Rank of the Square this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Square.

گ. Multiply the last figure of the Root into the sum, and write the product in the Rank of the Cube opposite to and immediately above the upper number in that Rank.

ل. Add together in the Rank of the Cube this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Cube.

And these operations are analogous to those from δ''. to θ''.

م. Add the last figure of the Root to the upper number in the Rank of the Latus, and write the sum opposite to and immediately above it. This sum is now the upper number in the Rank of the Latus.

ن. Multiply the last figure of the Rank into this sum, and write the product in the Rank of the Square opposite to and immediately above the upper number in that Rank.

و. Add together in the Rank of the Square this product and that upper number, and write the sum opposite to and immediately above them. This sum is now the upper number in the Rank of the Square.

And these operations are analogous to those from $\varkappa''$ to μ''.

ه. Add the last figure of the Root to the upper number in the Rank of the Latus, and write the sum opposite to and immediately above it. This sum is now the upper number in the Rank of the Latus.

And this operation is analogous to that of ξ″.

ي. Then add together the upper numbers in each Rank as found by Arts. ه و ل غ س and an additional Unit. The sum of all these will be the Denominator of the Fraction, to be added to the integral Root as required.

And performing these operations in this example with the last figure of the Root 7, the Result will be as follows :

	The upper number in the Rank of the
4,260,747,694,908,334,607,381,985,642.	Quadratus Cubi.
45,410,774,905,552,940,176,815.	Biquadrate,
258,125,396,471,245,260.	Cube.
825,325,162,335.	Square.
1,407,402.	Latus.
1.	The additional Unit.
4,260,793,105,941,366,382,119,977,455.	The sum or Denominator.

Hence, then, finally, the approximate 6th Root of the given number.

166,571,800,758,593,887,308,296,025,335,490

is the mixed number.

$$234{,}567\ \frac{987{,}654{,}321}{4{,}260{,}793{,}105{,}941{,}366{,}382{,}119{,}977{,}455}$$

And this concludes the operation according to the Arabian method.

(42). I now proceed to show the conformity of the above operation with the demonstration of Par. 11), et seq. and for this purpose must premise the following Lemmas.

Lemma 7. If two rows of figures be written mutually parallel, but so that the units of the first row be opposite the nth place of the second, the tens of the first opposite to place $n + 1$ of the second, the hundreds of the first opposite to place $n + 2$ of the second, &c. and the rows be in this situation added by the common Rule of Addition, this is equivalent to the first row having added (the second row) $\times$ (10^{n-1}).

Thus if there be written for the first row,	56,789.
for the second row,	123.
	58,019.

Then since 3, the units place of 123 is written opposite the tens or 2d place of 56,789, and since $2 - 1 = 1$, so this is equivalent to $56,789 + 123 \times 10^1 = 56,789 + 1,230$.

Similarly if there be written 56,789.

123.

69,089.

Then since the 3 is here written opposite the hundreds, or 3d place of 56,789, and since $3 - 1 = 2$, so this is equivalent to $56,789 + 123 \times 10^2 = 56,789 + 12,300$.

Similarly if there be written 56,789.

123.

179,789

This is equivalent to $56,789 + 123,000$.

No demonstration is required here.

43.) The division of the given number into periods written in the Pulpit Diagram, by Par. 37 and 38), is evidently the same as in the European Rule, Par. 32) and is therefore explained in Par. 34). Then

Since 166 the first period = A so as in Par. 34 Art. *b.*) its nearest approximate 6th Root which is 2, is = a.

a. Then $2 = a$ is the number written in the Rank of the Latus.

b. Then $2 \times 2 = 4 = a \times a = a^2$ is the number written in the Rank of the Square.

c. Then $4 \times 2 = 8 = a^2 \times a = a^3$ is the number written in the Rank of the Cube.

d. Then $8 \times 2 = 16 = a^3 \times a = a^4$ is the number written in the Rank of the Biquadrate.

e. Then $16 \times 2 = 32 = a^4 \times a = a^5$ is the number written in the Rank of the Quadratus Cubi.

f. Then $32 \times 2 = 64 = a^5 \times a = a^6$ is the number written in the Rank of the Number or Pulpit Diagram, and is the first subtrahend, agreeing with the first subtrahend of the European method, Par. 34 Art. *c.*)

g. h. i. Then $166 - 64 = 102 = A - a^6$ and is the first Remainder which agrees with the first Remainder of the European method, Par. 34 Art. *d*) and is therefore = R. (Par. 18.)

---

j. Since by Par. 34 Art. *e.*) $102{,}571{,}800 = R\varphi^6 + B$, hence the first Resolvend of the European and Arabian methods agree.

k. Then by Art. *a.*) since $2 = a$ so $2 + 2 = 4 = a + a = 2a$, and is the upper number in the Rank of the Latus.

l. Then $4 \times 2 = 8 = 2a \times a = 2a^2$, and is the product written in the Rank of the Square.

m. By Art. *b.*) since $4 = a^2$ so $8 + 4 = 12 = 2a^2 + a^2 = 3a^2$, and is the upper number in the Rank of the Square.

n. Then $12 \times 2 = 24 = 3a^2 \times a = 3a^3$, and is the product written in the Rank of the Cube.

p. By Art. *c.*) since $8 = a^3$ so $24 + 8 = 32 = 3a^3 + a^3 = 4a^3$, and is the upper number in the Rank of the Cube.

q. Then $32 \times 2 = 64 = 4a^3 \times a = 4a^4$, and is the product written in the Rank of the Biquadrate.

r. By Art. *d.*) since $16 = a^4$ so $64 + 16 = 80 = 4a^4 + a^4 = 5a^4$, and is the upper number in the Rank of the Biquadrate.

s. Then $80 \times 2 = 160 = 5a^4 \times a = 5a^5$, and is the product written in the Rank of the Quadratus Cubi.

t. By Art *e.*) since $32 = a^4$ so $160 + 32 = 192 = 5a^5 + a^5 = 6a^5$, and is the sum written in the Rank of the Quadratus Cubi.

u. By the transference of 192, its units are put under the 6th place of the second period, and hence $6a^5$ thus transferred, is the upper number in the Rank of the Quadratus Cubi.

---

v. Then by Art. *k.*) since $4 = 2a$ so $2 + 4 = 6 = a + 2a = 3a$, and is the upper number in the Rank of the Latus.

w. Then $6 \times 2 = 12 = 3\,a \times a = 3\,a^2$, and is the product written in the Rank of the Square.

x. By Art. *m.*) since $12 = 3\,a^2$ so $12 + 12 = 24 = 3\,a^2 + 3\,a^2 = 6\,a^2$, and is the upper number in the Rank of the Square.

y. Then $24 \times 2 = 48 = 6\,a^2 \times a = 6\,a^3$, and is the product written in the Rank of the Cube.

z. By Art. *p.*) since $32 = 4\,a^3$ so $48 + 32 = 80 = 6\,a^3 + 4\,a^3 = 10\,a^3$, and is the upper number in the Rank of the Cube.

α. Then $80 \times 2 = 160 = 10\,a^3 \times a = 10\,a^4$, and is the product written in the Rank of the Biquadrate.

β. By Art. *r.*) since $80 = 5\,a^4$ so $160 + 80 = 240 = 10\,a^4 + 5\,a^4 = 15\,a^4$, and is the sum written in the Rank of the Biquadrate.

γ. By the transference of 240, its units are put under the 5th place of the second period, and hence $15\,a^4$ thus transferred, is the upper number in Rank of the Biquadrate.

δ. Then by Art. *v.*) since $6 = 3\,a$ so $2 + 6 = 8 = a + 3\,a = 4\,a$, and is the upper number in the Rank of the Latus.

ε. Then $8 \times 2 = 16 = 4\,a \times a = 4\,a^2$, and is the product written in the Rank of the Square.

ζ. By Art. *x.*) since $24 = 6\,a^2$ so $16 + 24 = 40 = 6\,a^2 + 4\,a^2 = 10\,a^2$, and is the upper number in the Rank of the Square.

η. Then $40 \times 2 = 80 = 10\,a^2 \times a = 10\,a^3$, and is the product written in the Rank of the Cube.

θ. By Art. ε.) since $80 = 10\,a^3$ so $80 + 80 = 160 = 10\,a^3 + 10\,a^3 = 20\,a^3$, and is the sum written in the Rank of the Cube.

ι. By the transference of 160, its units are put under the 4th place of the second period, and hence $20\,a^3$ thus transferred, is the upper number in the Rank of the Cube.

κ. Then by Art. δ.) since $8 = 4\,a$ so $2 + 8 = 10 = a + 4\,a = 5\,a$, and is the upper number in the Rank of the Latus.

λ. Then $10 \times 2 = 20 = 5\,a \times a = 5\,a^2$, and is the product written in the Rank of the Square.

μ. By Art. ζ.) since $40 = 10\,a^2$ so $20 + 40 = 60 = 5\,a^2 + 10\,a^2 = 15\,a^2$, and is the sum written in the Rank of the Square.

ν. By the transference of 60, its units are put under the 3d place of the second period, and hence $15\,a^2$ thus transferred, is the upper number in the Rank of the Square.

ξ. Then by Art. λ.) since $10 = 5\,a$ so $2 + 10 = 12 = a + 5\,a = 6\,a$, and is the sum written in the Rank of the Latus.

π. By the transference of 12, its units are put under the second place of the second period, and hence $6\,a$ thus transferred, is the upper number in the Rank of the Latus.

---

1. Then if there be a Digit annexed to the right hand of the upper number in the Rank of the Latus, since by Art. π) this upper number

$= 6\,a$, so with the annexed Digit the whole figures will, by Lem. 6, become $= 6\,a\,\varphi +$ that Digit.

2. Then if that Digit be multiplied into these figures, the product will become $6\,a\,\varphi \times$ that Digit $+ \overline{\text{that Digit.}}|^2$ Then if this product be written in the Rank of the Square opposite to the second period, then since by the transference of Art. ν, the units of the upper number in the Rank of the Square, are put under the 3d place of the second period, so they are also put under the third place of this product.

3. Then if this product and that upper number be in this situation added together since by Art. ν) that upper number $= 15\,a^2$, so by Lem. 7, the sum $= 6\,a\,\varphi \times$ that Digit $+ \overline{\text{that Digit}}|^2 + 15\,a^2 \times \varphi^2 = 15\,a^2\,\varphi^2 + 6\,a\,\varphi \times$ that Digit $+ \overline{\text{that Digit}}|^2$.

4. Then if that Digit be multiplied into this sum, the product will become $15\,a^2\,\varphi^2 \times$ that Digit $+ 6\,a\,\varphi \times \overline{\text{that Digit}}|^2 + \overline{\text{that Digit}}|^3$. Then if this product be written in the Rank of the Cube, opposite to the second period, then since by the transference of Art. ι, the units of the upper number in the Rank of the Cube, are put under the 4th place of the second period, so they are also put under the 4th place of this product.

5. Then if this product and that upper number be in this situation added together since by Art. ι, that upper number $= 20\,a^3$ so by Lem. 7, the sum $= 15\,a^2\,\varphi^2 \times$ that Digit $+ 6\,a\,\varphi \times \overline{\text{that Digit}}|^2 + \overline{\text{that Digit}}|^3 + 20\,a^3 \times \varphi^3 = 20\,a^3\,\varphi^3 + 15\,a^2\,\varphi^2 \times$ that Digit $+ 6\,a\,\varphi \times \overline{\text{that Digit}}|^2 + \overline{\text{that Digit}}|^3$

6. Then if that Digit be multiplied into this sum, the product will become $20\,a^3\,\varphi^3 \times$ that Digit $+ 15\,a^2\,\varphi^2 \times \overline{\text{that Digit}}|^2 + 6\,a\,\varphi \times \overline{\text{that Digit}}|^3 + \overline{\text{that Digit.}}|^4$ Then if this product be written in the Rank of the Biquadrate, opposite to the second Period, then since by the transference

of Art. γ, the units of the upper number in the Rank of the Biquadrate, are put under the 5th place of the second period, so they are also put under the 5th place of this product.

7. Then if this product and that upper number be in this situation added together since by Art. γ) that upper number $= 15\ a^4$ so by Lem. 7, the sum $= 20\ a^3\ \varphi^3 \times$ that Digit $+ 15\ a^2\ \varphi^2 \times \overline{\text{that Digit}}|^2 + 6\ a\ \varphi \times \overline{\text{that Digit}}|^3 + \overline{\text{that Digit}}|^4 + 15\ a^4 \times \varphi^4 = 15\ a^4\ \varphi^4 + 20\ a^3\ \varphi^3 \times$ that Digit $+ 15\ a^2\ \varphi^2 \times \overline{\text{that Digit}}|^2 + 6\ a\ \varphi \times \overline{\text{that Digit}}|^3 + \overline{\text{that Digit}}|^4$.

8. Then if that Digit be multiplied into this sum, the product will become $15\ a^4\ \varphi^4 \times$ that Digit $+ 20\ a^3\ \varphi^3 \times \overline{\text{that Digit}}|^2 + 15\ a^2\ \varphi^2 \times \overline{\text{that Digit}}|^3 + 6\ a\ \varphi \times \overline{\text{that Digit}}|^4 + \overline{\text{that Digit}}|^5$. Then if this product be written in the Rank of the Quadratus Cubi, opposite to the second period, then since by the transference of Art. u, the units of the upper number in the Rank of the Quadratus Cubi are put under the 6th place of the second period, so they are also put under the 6th place of this product.

9. Then if this product and that upper number be in this situation added together since by Art. u) that upper number $= 6\ a^5$, so by Lem. 7, the sum $= 15\ a^4\ \varphi^4 \times$ that Digit $+ 20\ a^3\ \varphi^3 \times \overline{\text{that Digit}}|^2 + 15\ a^2\ \varphi^2 \times \overline{\text{that Digit}}|^3 + 6\ a\ \varphi \times \overline{\text{that Digit}}|^4 + \overline{\text{that Digit}}|^5 + 6\ a^5 \times \varphi^5 = 6\ a^5\ \varphi^5 + 15\ a^4\ \varphi^4 \times$ that Digit $+ 20\ a^3\ \varphi^3 \times \overline{\text{that Digit}}|^2 + 15\ a^2\ \varphi^2 \times \overline{\text{that Digit}}|^3 + 6\ a\ \varphi \times \overline{\text{that Digit}}|^4 + \overline{\text{that Digit}}|^5$.

10. Then if that Digit be multiplied into this sum, the product will become $6\ a^5\ \varphi^5 \times$ that Digit $+ 15\ a^4\ \varphi^4 \times \overline{\text{that Digit}}|^2 + 20\ a^3\ \varphi^3 \times \overline{\text{that Digit}}|^3 + 15\ a^2\ \varphi^2 \times \overline{\text{that Digit}}|^4 + 6\ a\ \varphi \times \overline{\text{that Digit}}|^5 + \overline{\text{that Digit}}|^6$, which is required to be not greater than $R\ \varphi^6 + B$ by Art. j). Now this is evidently the same as the expression of Par. 20). $6\ a^5\ \varphi^5\ b + 15\ a^4\ \varphi^4\ b^2 + 20\ a^3\ \varphi^3\ b^3$

$+ 15\, a^2\, \varphi^2\, b^4 + 6\, a\, \varphi\, b^5 + b^6$ having that Digit substituted for b. And since $6\, a^5\, \varphi^5\, b + 15\, a^4\, \varphi^4\, b^2 + 20\, a^3\, \varphi^3\, b^3 + 15\, a^2\, \varphi^2\, b^4 + 6\, a\, \varphi\, b^5 + b^6$, must also be not greater than $\mathrm{R}\, \varphi^6 + \mathrm{B}$, and since this b must be a Digit so it is evident that the present operation from Art. 1 to 10) is equivalent to seeking the b of Par. 20). and since 3 by Art. ϱ et seq.) is the found Digit, so 3 also expounds the b of Par. 20) and then—

ϱ. Since by Art. π) $12 = 6\, a$, and since 3 contains one figure, so $123 = 6\, a\, \varphi + b$ by Lem. 6,) and is the upper number in the Rank of the Latus.

σ. Then $123 \times 3 = 369 = (6\, a\, \varphi + b) \times b = 6\, a\, \varphi\, b + b^2$, and is the product written in the Rank of the Square.

τ. Then since by Art. ν) $60 = 15\, a^2$, with its units put under the 3d place of 369, so by Lem. 7,) their sum in this situation $= 369 + 60 \times 10^2 = 369 + 6{,}000 = 6{,}369 = (6\, a\, \varphi\, b + b^2) + 15\, a^2\, \varphi^2 = 15\, a^2\, \varphi^2 + 6\, a\, \varphi\, b + b^2$, and is the upper number in the Rank of the Square.

υ. Then $6{,}369 \times 3 = 19{,}107 = (15\, a^2\, \varphi^2 + 6\, a\, \varphi + b^2) \times b = 15\, a^2\, \varphi^2\, b + 6\, a\, \varphi\, b^2 + b^3$, and is the product written in the Rank of the Cube.

ϕ. Then since by Art. ι) $160 = 20\, a^3$, with its units put under the 4th place of 19,107, so by Lem. 7,) their sum in this situation $= 19{,}107 + 160 \times 10^3 = 19{,}107 + 160{,}000 = 179{,}107 = (15\, a^2\, \varphi^2\, b + 6\, a\, \varphi\, b^2 + b^3) + 20\, a^3 \times \varphi^3 = 20\, a^3\, \varphi^3 + 15\, a^2\, \varphi^2\, b + 6\, a\, \varphi\, b^2 + b^3$, and is the upper number in the Rank of the Cube.

χ. Then $179{,}107 \times 3 = 537{,}321 = (20\, a^3\, \varphi^3 + 15\, a^2\, \varphi^2\, b + 6\, a\, \varphi\, b^2 + b^3) \times b = 20\, a^3\, \varphi^3\, b + 15\, a^2\, \varphi^2\, b^2 + 6\, a\, \varphi\, b^3 + b^4$, and is the product written in the Rank of the Biquadrate.

ث. Then since by Art. γ) $240 = 15\ a^4$, with its unit put under the 5th place of 507,321 so by Lem. 7,) their sum in this situation $= 537{,}321 + 240 \times 10^4 = 537{,}321 + 2{,}400{,}000 = 2{,}937{,}321 = (20\ a^3\ \varphi^3\ b + 15\ a^2\ \varphi^2\ b^2 + 6\ a\ \varphi\ b^3 + b^4) + 15\ a^4 \times \varphi^4 = 15\ a^4\ \varphi^4 + 20\ a^3\ \varphi^3\ b + 15\ a^2\ \varphi^2\ b^2 + 6\ a\ \varphi\ b^3 + b^4$, and is the upper number in the Rank of the Biquadrate.

ج. Then $2{,}937{,}321 \times 3 = 8{,}811{,}963 = (15\ a^4\ \varphi^4 + 20\ a^3\ \varphi^3\ b + 15\ a^2\ \varphi^2\ b^2 + 6\ a\ \varphi\ b^3 + b^4) \times b = 15\ a^4\ \varphi^4\ b + 20\ a^3\ \varphi^3\ b^2 + 15\ a^2\ \varphi^2\ b^3 + 6\ a\ \varphi\ b^4 + b^5$, and is the product written in the Rank of the Biquadrate.

ح. Then since by Art. u). $192 = 6\ a^5$, with its units put under the 6th place of 8,811,963, so by Lem. 7), their sum in this situation $= 8{,}811{,}963 + 192 \times 10^5 = 8{,}811{,}963 + 19{,}200{,}000 = 28{,}011{,}963 = (15\ a^4\ \varphi^4\ b + 20\ a^3\ \varphi^3\ b^2 + 15\ a^2\ \varphi^2\ b^3 + 6\ a\ \varphi\ b^4 + b^5) + 6\ a^5 \times \varphi^5 = 6\ a^5\ \varphi^5 + 15\ a^4\ \varphi^4\ b + 20\ a^3\ \varphi^3\ b^2 + 15\ a^2\ \varphi^2\ b^3 + 6\ a\ \varphi\ b^4 + b^5$

خ. Then $28{,}011{,}963 \times 3 = 84{,}035{,}889 = (6\ a^5\ \varphi^5 + 15\ a^4\ \varphi^4\ b + 20\ a^3\ \varphi^3\ b^2 + 15\ a^2\ \varphi^2\ b^3 + 6\ a\ \varphi\ b^4 + b^5) \times b = a^5\ \varphi^5\ b + 15\ a^4\ \varphi^4\ b^2 + 20\ a^3\ \varphi^3\ b^3 + 15\ a^2\ \varphi^2\ b^4 + 6\ a\ \varphi\ b^5 + b^6$, and is less than 102,571,800, or $\mathrm{R}\ \varphi^6 + \mathrm{B}$ by Art. j.

د Then since 3 is the greatest number which answers this condition, so 3 is the second figure of the Root, and agrees with the second figure of the Root found by the European method in Par. 34, Art. b').

ذ And 84,035,889 expounds the second Subtrahend, which agrees with the second Subtrahend found by the European method in Par. 34, Art. c'.

ر And since by Art. j) $102{,}571{,}800 = \mathrm{R}\ \varphi^6 + \mathrm{B}$, so $102{,}571{,}800 - 84{,}035{,}889 = 18{,}535{,}911 = \mathrm{R}\ \varphi^6 + \mathrm{B} - (6\ a^5\ \varphi^5\ b + 15\ a^4\ \varphi^4\ b^2 + 20\ a^3$

$\varphi^3 b^3 + 15 a^2 \varphi^2 b^4 + 6 a \varphi b^5 + b^3$) and is the second Remainder, which therefore agrees with the second Remainder found by the European method in Par. 34, Art. d', and is therefore $=$ R′ (Par. 21).

---

j'. Then as in Par. 34 Art. e') 18,535,911,758,593 expounds R′ $\varphi^6 +$ C, and hence the second Resolvend of the European and Arabian methods agree.

k'. Then by Art. ϱ). Since $123 = 6 a \varphi + b$, so $3 + 123 = 126 = b + (6 a \varphi + b) = 6 a \varphi + 2 b$, and is the upper number in the Rank of the Latus.

l'. Then $126 \times 3 = 378 = (6 a \varphi + 2 b) \times b = 6 a \varphi b + 2 b^2$, and is the product written in the Rank of the Square.

m'. By Art. τ). Since $6{,}369 = 15 a^2 \varphi^2 + 6 a \varphi b + b^2$, so $378 + 6{,}369 = 6{,}747 = (6 a \varphi b + 2 b^2) + (15 a^2 \varphi^2 + 6 a \varphi b + b^2) = 15 a^2 \varphi^2 + 12 a \varphi b + b^2$, and is the upper number in the Rank of the Square.

n'. Then $6{,}747 \times 3 = 20{,}241 = (15 a^2 \varphi^2 + 12 a \varphi b + 3 b^2) \times b = 15 a^2 \varphi^2 b + 12 a \varphi b^2 + 3 b^3$, and is the product written in the Rank of the Cube.

p'. By Art. φ). Since $179{,}107 = 20 a^3 \varphi^3 + 15 a^2 \varphi^2 b + 6 a \varphi b^2 + b^3$, so $20{,}241 + 179{,}107 = 199{,}348 = (15 a^2 \varphi^2 b + 12 a \varphi b^2 + 3 b^3) + (20 a^3 \varphi^3 + 15 a^2 \varphi^2 b + 6 a \varphi b^2 + b^3) = 20 a^3 \varphi^3 + 30 a^2 \varphi^2 b + 18 a \varphi b^2 + 4 b^3$, and is the upper number in the Rank of the Cube.

q'. Then $199{,}348 \times 3 = 598{,}044 = (20 a^3 \varphi^3 + 30 a^2 \varphi^2 b + 18 a \varphi b^2 + 4 b^3) \times b = 20 a^3 \varphi^3 b + 30 a^2 \varphi^2 b^2 + 18 a \varphi b^3 + 4 b^4$, and is the product written in the Rank of the Biquadrate.

r'. By Art. ψ). Since $2{,}937{,}321 = 15\,a^4\,\varphi^4 + 20\,a^3\,\varphi^3\,b + 15\,a^2\,\varphi^2\,b^2 + 6\,a\,\varphi\,b^3 + b^4$, so $598{,}044 + 2{,}937{,}321 = 3{,}535{,}365 = (20\,a^3\,\varphi^3\,b + 30\,a^2\,\varphi^2\,b^2 + 18\,a\,\varphi\,b^3 + 4\,b^4) + (15\,a^4\,\varphi^4 + 20\,a^3\,\varphi^3\,b + 15\,a^2\,\varphi^2\,b^2 + 6\,a\,\varphi\,b^3 + b^4) = 15\,a^4\,\varphi^4 + 4\,a^3\,\varphi^3\,b + 45\,a^2\,\varphi^2\,b^2 + 24\,a\,\varphi\,b^3 + 5\,b^4$, and is the upper number in the Rank of the Biquadrate.

s'. Then $3{,}535{,}365 \times 3 = 10{,}606{,}095 = (15\,a^4\,\varphi^4 + 40\,a^3\,\varphi^3\,b + 45\,a^2\,\varphi^2\,b^2 + 24\,a\,\varphi\,b^3 + 5\,b^4) \times b = 15\,a^4\,\varphi^4\,b + 40\,a^3\,\varphi^3\,b^2 + 45\,a^2\,\varphi^2\,b^3 + 24\,a\,\varphi\,b^4 + 5\,b^5$, and is the product written in the Rank of the Quadratus Cubi.

t'. By Art. ι). Since $28{,}011{,}963 = 6\,a^5\,\varphi^5 + 15\,a^4\,\varphi^4\,b + 20\,a^3\,\varphi^3\,b^2 + 15\,a^2\,\varphi^2\,b^3 + 6\,a\,\varphi\,b^4 + b^5$, so $10{,}606{,}095 + 28{,}011{,}963 = 38{,}618{,}058 = (15\,a^4\,\varphi^4\,b + 40\,a^3\,\varphi^3\,b^2 + 45\,a^2\,\varphi^2\,b^3 + 24\,a\,\varphi\,b^4 + 5\,b^5) + (6\,a^5\,\varphi^5 + 15\,a^4\,\varphi^4\,b + 20\,a^3\,\varphi^3\,b^2 + 15\,a^2\,\varphi^2\,b^3 + 6\,a\,\varphi\,b^4 + b^5) = 6\,a^5\,\varphi^5 + 30\,a^4\,\varphi^4\,b + 60\,a^3\,\varphi^3\,b^2 + 60\,a^2\,\varphi^2\,b^3 + 30\,a\,\varphi\,b^4 + 6\,b^5 = 6\,(a^5\,\varphi^5 + 5\,a^4\,\varphi^4\,b + 10\,a^3\,\varphi^3\,b^2 + 10\,a^2\,\varphi^2\,b^3 + 5\,a\,\varphi\,b^4 + b^5) = 6\,(a\,\varphi + b)^5$, and since $a\,\varphi + b$ is $= p$ by Par. 21), so $6\,(a\,\varphi + b)^5 = 6\,p^5$, and is the sum written in the Rank of the Quadratus Cubi.

u'. By the transference of 38,618,058, its units are put under the 6th place of the third period, and hence $6\,p^5$ thus transferred is the upper number in the Rank of the Quadratus Cubi.

---

v'. Then by Art. *k'*.) Since $126 = 6\,a\,\varphi + 2\,b$, so $3 + 126 = 129 = b + (6\,a\,\varphi + 2\,b) = 6\,a\,\varphi + 3\,b$, and is the upper number in the Rank of the Latus.

w'. Then $129 \times 3 = 387 = (6\,a\,\varphi + 3\,b) \times b = 6\,a\,\varphi\,b + 3\,b^2$, and is the product written in the Rank of the Square.

x'. Then by Art. m'.) Since $6{,}747 = 15\,a^2\,\varphi^2 + 12\,a\,\varphi\,b + 3\,b^2$, so $387 + 6{,}747 = 7{,}134 = (6\,a\,\varphi\,b + 3\,b^2) + (15\,a^2\,\varphi^2 + 12\,a\,\varphi\,b + 3\,b^2) = 15\,a^2\,\varphi^2 + 18\,a\,\varphi\,b + 6\,b^2$, and is the upper number in the Rank of the Square.

y'. Then $7{,}134 \times 3 = 21{,}402 = (15\,a^2\,\varphi^2 + 18\,a\,\varphi\,b + 6\,b^2) \times b = 15\,a^2\,\varphi^3\,b + 18\,a\,\varphi\,b^2 + 6\,b^3$, and is the product written in the Rank of the Cube.

z'. Then by Art. p'.) Since $199{,}348 = 20\,a^3\,\varphi^3 + 30\,a^2\,\varphi^2\,b + 18\,a\,\varphi\,b^2 + 4\,b^3$, so $21{,}402 + 199{,}348 = 220{,}750 = (15\,a^2\,\varphi^2\,b + 18\,a\,\varphi\,b^2 + 6\,b^3) + (20\,a^3\,\varphi^3 + 30\,a^2\,\varphi^2\,b + 18\,a\,\varphi\,b^2 + 4\,b^3) = 20\,a^3\,\varphi^3 + 45\,a^2\,\varphi^2\,b + 36\,a\,\varphi\,b^2 + 10\,b^3$, and is the upper number in the Rank of the Cube.

α'. Then $220{,}750 \times 3 = 662{,}250 = (20\,a^3\,\varphi^3 + 45\,a^2\,\varphi^2\,b + 36\,a\,\varphi\,b^2 + 10\,b^3) \times b = 20\,a^3\,\varphi^3\,b + 45\,a^2\,\varphi^2\,b^2 + 36\,a\,\varphi\,b^3 + 10\,b^4$, and is the product written in the Rank of the Biquadrate.

β'. Then by Art r') Since $3{,}535{,}365 = 15\,a^4\,\varphi^4 + 40\,a^3\,\varphi^3\,b + 45\,a^2\,\varphi^2\,b^2 + 24\,a\,\varphi\,b^3 + 5\,b^4$, so $662{,}250 + 3{,}535{,}365 = 4{,}197{,}615 = (20\,a^3\,\varphi^3\,b + 45\,a^2\,\varphi^2\,b^2 + 36\,a\,\varphi\,b^3 + 10\,b^4) + (15\,a^4\,\varphi^4 + 40\,a^3\,\varphi^3\,b + 45\,a^2\,\varphi^2\,b^2 + 24\,a\,\varphi\,b^3 + 5\,b^4) = 15\,a^4\,\varphi^4 + 60\,a^3\,\varphi^3\,b + 90\,a^2\,\varphi^2\,b^2 + 60\,a\,\varphi\,b^3 + 15\,b^4 = 15\,(a^4\,\varphi^4 + 4\,a^3\,\varphi^3\,b + 6\,a^2\,\varphi^2\,b^2 + 4\,a\,\varphi\,b^3 + b^4) = 15\,(a\,\varphi + b)^4$, and since $a\,\varphi + b$ is $= p$ by Par. 21, so $15\,(a\,\varphi + b)^4 = 15\,p^4$, and is the sum written in the Rank of the Biquadrate.

γ'. By the transference of 4,197,615, its units are put under the 5th place of the third period, and hence $15\,p^4$ thus transferred, is the upper number in the Rank of the Biquadrate.

δ'. Then by Art. v'.) Since $129 = 6\,a\,\varphi + 3\,b$, so $3 + 129 = 132 = b + (6\,a\,\varphi + 3\,b) = 6\,a\,\varphi + 4\,b$, and is the upper number in the Rank of the Latus.

ϵ'. Then $132 \times 3 = 396 = (6\,a\,\varphi + 4\,b) \times b = 6\,a\,\varphi\,b + 4\,b^2$, and is the product written in the Rank of the Square.

ζ'. Then by Art. x'.) Since $7{,}134 = 15\,a^2\,\varphi^2 + 18\,a\,\varphi\,b + 6\,b^2$, so $396 + 7{,}134 = 7{,}530 = (6\,a\,\varphi\,b + 4\,b^2) + (15\,a^2\,\varphi^2 + 18\,a\,\varphi\,b + 6\,b^2) = 15\,a^2\,\varphi^2 + 24\,a\,\varphi\,b + 10\,b^2$, and is the upper number in the Rank of the Square.

η'. Then $7{,}530 \times 3 = 22{,}590 = (15\,a^2\,\varphi^2 + 24\,a\,\varphi\,b + 10\,b^2) \times b = 15\,a^2\,\varphi^2\,b + 24\,a\,\varphi\,b^2 + 10\,b^3$, and is the product written in the Rank of the Cube.

θ'. Then by Art. z'.) Since $220{,}750 = 20\,a^3\,\varphi^3 + 45\,a^2\,\varphi^2\,b + 36\,a\,\varphi\,b^2 + 10\,b^3$ so $22{,}590 + 220{,}750 = 243{,}340 = (15\,a^2\,\varphi^2\,b + 24\,a\,\varphi\,b^2 + 10\,b^3) + (20\,a^3\,\varphi^3 + 45\,a^2\,\varphi^2\,b + 36\,a\,\varphi\,b^2 + 10\,b^3) = 20\,a^3\,\varphi^3 + 60\,a^2\,\varphi^2\,b + 60\,a\,\varphi\,b^2 + 20\,b^3 = 20\,(a^3\,\varphi^3 + 3\,a^2\,\varphi^2\,b + 3\,a\,\varphi\,b^2 + b^3) = 20\,(a\,\varphi + b)^3$, and since $a\,\varphi + b$ is $= p$ by Par. 21). so $20\,(a\,\varphi + b)^3 = 20\,p^3$, and is the sum written in the Rank of the Cube.

ι'. By the transference of 243,340, its units are put under the 4th place of the third period, and hence $20\,p^3$, thus transferred, is the upper number in the Rank of the Cube.

$\varkappa'$. Then by Art. δ'). Since $132 = 6\,a\,\varphi + 4\,b$ so $3 + 132 = 135 = b + (6\,a\,\varphi + 4\,b) = 6\,a\,\varphi + 5\,b$, and is the upper number in the Rank of the Latus.

λ'). Then $135 \times 3 = 405 = (6\,a\,\varphi + 5\,b) \times b = 6\,a\,\varphi\,b + 5\,b^2$, and is the product written in the Rank of the Square.

μ'. Then by Art. ζ'.) Since $7{,}530 = 15\,a^2\,\varphi^2 + 24\,a\,\varphi\,b + 10\,b^2$ so $405 + 7{,}530 = 7{,}935 = (6\,a\,\varphi\,b + 5\,b^2) + (15\,a^2\,\varphi^2 + 24\,a\,\varphi\,b + 10\,b^2) = 15\,a^2\,\varphi^2 + 30\,a\,\varphi\,b + 15\,b^2 = 15\,(a^2\,\varphi^2 + 2\,a\,\varphi\,b + b^2) = 15\,(a\,\varphi + b)^2$, and since $a\,\varphi + b$ is $= p$ by Par. 21) so $15\,(a\,\varphi + b)^2 = 15\,p^2$, and is the sum written in the Rank of the Square.

ν'. By the transference of 7,935, its units are put under the 3d place of the third period, and hence $15p^2$, thus transferred, is the upper number in the Rank of the Square.

ξ'. Then by Art. $\varkappa'$.) Since $135 = 6\,a\,\varphi + 5\,b$ so $3 + 135 = 138 = b + (6\,a\,\varphi + 5\,b) = 6\,a\,\varphi + 6\,b = 6\,(a\,\varphi + b)$, and since $a\,\varphi + b$ is $= p$ by Par. 21) so $6\,(a\,\varphi + b) = 6\,p$, and is the sum written in the Rank of the Latus.

π'. By the transference of 138, its units are under the 2d place of the third period, and hence $6\,p$, thus transferred, is the upper number in the Rank of the Latus.

1'. Then if there be a Digit annexed to the right hand of the upper number in the Rank of the Latus, since by Art. π') this upper number $= 6\,p$ so with the annexed Digit, the whole figures will, by Lem. 6) become $= 6\,p\,\varphi +$ that Digit.

2'. Then if that Digit be multiplied into these figures, the product will become $6\,p\,\varphi \times$ that Digit $+ \overline{\text{that Digit}}|^2$. Then if this product be writ-

ten in the Rank of the Square opposite to the third period, then since by the transference of Art. ν', the units of the upper number in the Rank of the Square are put under the 3d place of the third period, so they are also put under the 3d place of this product.

3′. Then if this product, and that upper number be in the situation added together, since by Art. ν') that upper number $= 15\,p^2$ so by Lem 7). the sum $= 5\,p\,\varphi \times$ that Digit $+ \overline{\text{that Digit}}|^2 + 15\,p^2 \times \varphi^2 = 15\,p^2\,\varphi^2 + 6\,p\,\varphi \times$ that Digit $+ \overline{\text{that Digit}}|^2$

4′. Then if that Digit be multiplied into this sum, the product will become $15\,p^2\,\varphi^2 \times$ that Digit $+ 6\,p\,\varphi \times \overline{\text{that Digit}}|^2 + \overline{\text{that Digit}}|^3$. Then if this product be written in the Rank of the Cube, opposite to the third period, since by the transference of Art. ι', the units of the upper number in the Rank of the Cube are put under the 4th place of the third period, so they are also put under the 4th place of this product.

5′. Then if this product and that upper number be in this situation added together, since by Art. ι') that upper number $= 20\,a^3$ so by Lem. 7). the sum $=$
$15\,p^2\,\varphi^2 \times$ that Digit $+ 6\,p\,\varphi \times \overline{\text{that Digit}}|^2 + \overline{\text{that Digit}}|^3 + 20\,p^3 \times \varphi^3 =$
$20\,p^3\,\varphi^3 + 15\,p^2\,\varphi^2 \times$ that Digit $+ 6\,p\,\varphi \times \overline{\text{that Digit}}|^2 \times \overline{\text{that Digit}}|^3$.

6′. Then if that Digit be multiplied into this sum the product will become $20\,p^3\,\varphi^3 \times$ that Digit $+ 15\,p^2\,\varphi^2 \times \overline{\text{that Digit}}|^2 + 6\,p\,\varphi \times \overline{\text{that Digit}}|^3 + \overline{\text{that Digit}}|^4$. Then if this product be written in the Rank of the Biquadrate opposite the third period, since by the transference of Art. γ') the units of the upper number in the Rank of the Biquadrate are put under the 5th place of the third period, so they are also put under the 5th place of this product.

7′. Then if this product and that upper number be in this situation added together, since by Art. γ') that upper number $= 15\,p^4$ so by Lem. 7) the sum $=$

$20\,p^3\,\varphi^3 \times$ that Digit $+ 15\,p^2\,\varphi^2 \times \overline{\text{that Digit}}|^2 + 6\,p\,\varphi \times \overline{\text{that Digit}}|^3 + \overline{\text{that Digit}}|^4 + 15\,p^4 \times \varphi^4 = 15\,p^4\,\varphi^4 + 20\,p^3\,\varphi^3 \times$ that Digit $+ 15\,p^2\,\varphi^2 \times \overline{\text{that Digit}}|^2 + 6\,p\,\varphi \times \overline{\text{that Digit}}|^3 + \overline{\text{that Digit}}|^4$.

8′. Then if that Digit be multiplied into this sum, the product will become $15\,p^4\,\varphi^4 \times$ that Digit $+ 20\,p^3\,\varphi^3 \times \overline{\text{that Digit}}|^2 + 15\,p^2\,\varphi^2 \times \overline{\text{that Digit}}|^3 + 6\,p\,\varphi \times \overline{\text{that Digit}}|^4 + \overline{\text{that Digit}}|^5$. Then if this product be written in the Rank of the Quadratus Cubi, opposite the third period, since by the transference of Art. u', the units of the upper number in the Rank of the Quadratus Cubi are put under the 6th place of the third period, so they are also put under the 6th place of this product.

9′. Then if this product and that upper number be in this situation added together, since by Art. u', that upper number $= 6\,p^5$ so by Lem. 7) the sum $= 15\,p^4\,\varphi^4 \times$ that Digit $+ 20\,p^3\,\varphi^3 \times \overline{\text{that Digit}}|^2 + 15\,p^2\,\varphi^2 \times \overline{\text{that Digit}}|^3 + 6\,p\,\varphi \times \overline{\text{that Digit}}|^4 + \overline{\text{that Digit}}|^5 + 6\,p^5 \times \varphi^5 = 6\,p^5\,\varphi^5 + 15\,p^4\,\varphi^4 \times$ that Digit $+ 20\,p^3\,\varphi^3 \times \overline{\text{that Digit}}|^2 + 15\,p^2\,\varphi^2 \times \overline{\text{that Digit}}|^3 + 6\,p\,\varphi \times \overline{\text{that Digit}}|^4 + \overline{\text{that Digit}}|^5$.

10′. Then if that Digit be multiplied into this sum, the product will become $6\,p^5\,\varphi^5 \times$ that Digit $+ 15\,p^4\,\varphi^4 \times \overline{\text{that Digit}}|^2 + 20\,p^3\,\varphi^3 \times \overline{\text{that Digit}}|^3 + 15\,p^2\,\varphi^2 \times \overline{\text{that Digit}}|^4 + 6\,p\,\varphi \times \overline{\text{that Digit}}|^5 + \overline{\text{that Digit}}|^6$, which is required to be not greater than $R'\,\varphi^6 + C$ by Art. j'.) Now this is evidently the same as the expression of Par. 23.) $6\,p^5\,\varphi^5\,c + 15\,p^4\,\varphi^4\,c^2 + 20\,p^3\,\varphi^3\,c^3 + 15\,p^2\,\varphi^2\,c^4 + 6\,p\,\varphi\,c^5 + c^6$, having that Digit substituted for c. And since $6\,p^5\,\varphi^5\,c + 15\,p^4\,\varphi^4\,c^2 + 20\,p^3\,\varphi^3\,c^3 + 15\,p^2\,\varphi^2\,c^4 + 6\,p\,\varphi\,c^5 + c^6$, must also be not greater than $R'\,\varphi^6 + C$, and since this c must be a Digit, so it is

evident that the present operation from Art. 1′ to 10′.) is equivalent to seeking the c of Par. 23) and since 4 by Art. ξ'. et seq. is the found Digit, so 4 also expounds the c of Par. 23) and then—

ξ'. Since by Art. ξ') $138 = 6\,p$, and since 4 contains one figure, so $1384 = 6\,p\,\varphi + c$ by Lem. 6) and is the upper number in the Rank of the Latus.

σ'. Then $1{,}384 \times 4 = 5{,}536 = (6\,p\,\varphi + c) \times c = 6\,p\,\varphi\,c \times c^2$, and is the product written in the Rank of the Square.

ι'. Then since by Art. μ'). $7{,}935 = 15\,p^2$, with its units put under the 3d place of 5,536 so by Lem. 7) their sum in this situation $= 5{,}536 + 7{,}935 \times 10^2 = 5{,}536 + 793{,}500 = 799{,}036 = (6\,p\,\varphi\,c + c^2) + 15\,p^2 \times \varphi^2 = 15\,p^2\,\varphi^2 \times 6\,p\,\varphi\,c + c^2$, and is the upper number in the Rank of the Square.

υ'. Then $799{,}036 \times 4 = 3{,}196{,}144 = (15\,p^2\,\varphi^2 \times 6\,p\,\varphi\,c \times c^2) \times c = 15\,p^2\,\varphi^2\,c + 6\,p\,\varphi\,c^2 + c^3$, and is the product written in the Rank of the Cube.

φ'. Then since by Art. δ'), $243{,}340 = 20\,p^3$, with its units put under the 4th place of 3,196,144 so by Lem. 7) their sum in this situation $= 3{,}196{,}144 + 243{,}340 \times 10^3 = 3{,}196{,}144 + 243{,}340{,}000 = 246{,}536{,}144 = (15\,p^2\,\varphi^2\,c + 6\,p\,\varphi\,c^2 + c^3) + 20\,p^3 \times \varphi^3 = 20\,p^3\,\varphi^3 + 15\,p^2\,\varphi^2\,c + 6\,p\,\varphi\,c^2 + c^3$, and is the upper number in the Rank of the Cube.

χ'. Then $246{,}536{,}144 \times 4 = 986{,}144{,}576 = (20\,p^3\,\varphi^3 + 15\,p^2\,\varphi^2\,c + 6\,p\,\varphi\,c^2 + c^3) \times c = 20\,p^3\,\varphi^3\,c + 15\,p^2\,\varphi^2\,c^2 + 6\,p\,\varphi\,c^3 + c^4$, and is the product written in the Rank of the Biquadrate.

ψ'. Then since by Art. γ') $4{,}197{,}615 = 15\,p^4$, with its units put under the 5th place of 986,144,576 so by Lem. 7) their sum in this situation $= 986{,}144{,}576 + 4{,}197{,}615 \times 10^4 = 986{,}144{,}576 + 41{,}976{,}150{,}000 = 42{,}962{,}294{,}576 = (20\,p^3\,\varphi^3\,c + 15\,p^2\,\varphi^3\,c^2 + 6\,p\,\varphi\,c^3 + c^4) + 15\,p^4 \times \varphi^4 = 15\,p^4\,\varphi^4 + 20\,p^3\,\varphi^3\,c + 15\,p^2\,\varphi^2\,c^2 + 6\,p\,\varphi\,c^3 + c^4$, and is the upper number in the Rank of the Biquadrate.

ω'. Then $42{,}962{,}294{,}576 \times 4 = 171{,}849{,}178{,}304 = (15\,p^4\,\varphi^4 + 20\,p^3\,\varphi^3\,c + 15\,p^2\,\varphi^2\,c^2 + 6\,p\,\varphi\,c^3 + c^4) \times c = 15\,p^4\,\varphi^4\,c + 20\,p^3\,\varphi^3\,c^2 + 15\,p^2\,\varphi^2\,c^3 + 6\,p\,\varphi\,c^4 + c^5$, and is the product written in the Rank of the Quadratus Cubi.

V. Then since by Art. t') $38{,}618{,}058 = 6\,p^5$, with its units put under the 6th place of 171,849,178,304 so by Lem. 7) their sum in this situation $= 171{,}849{,}178{,}304 + 38{,}618{,}058 \times 10^5 = 171{,}849{,}178{,}304 + 3{,}861{,}805{,}800{,}000 = 4{,}033{,}654{,}978{,}304 = (15\,p^4\,\varphi^4\,c + 20\,p^3\,\varphi^3\,c^2 + 15\,p^2\,\varphi^2\,c^3 + 6\,p\,\varphi\,c^4 + c^5) + 6\,p^5 \times \varphi^5 = 6\,p^5\,\varphi^5 + 15\,p^4\,\varphi^4\,c + 20\,p^3\,\varphi^3\,c^2 + 15\,p^2\,\varphi^2\,c^3 + 6\,p\,\varphi\,c^4 + c^5$, and is the upper number in the Rank of the Quadratus Cubi.

ب'. Then $4{,}033{,}654{,}978{,}304 \times 4 = 16{,}134{,}619{,}913{,}216 = (6\,p^5\,\varphi^5 + 15\,p^4\,\varphi^4\,c + 20\,p^3\,\varphi^3\,c^2 + 15\,p^2\,\varphi^2\,c^3 + 6\,p\,\varphi\,c^4 + c^5) \times c = 6\,p^5\,\varphi^5\,c + 15\,p^4\,\varphi^4\,c^2 + 20\,p^3\,\varphi^3\,c^3 + 15\,p^2\,\varphi^2\,c^4 + 6\,p\,\varphi\,c^5 + c^6$) and is less than 18,535,911,758,593, or $R'\,\varphi^6 + C$ by Art j'.

پ'. Then since 4 is the greatest number which answers this condition, so 4 is the third figure of the Root, and agrees with the third figure of the Root found by the European method in Par. 34, Art. b''.)

ت'. And 16,134,619,913 216 expounds the third Subtrahend, which agrees with the third Subtrahend found by the European method in Par. 34, Art. c'').

ث. And since by Art. j') $18,535,911,758,593 = R'' \varphi^6 + C$, so $18,535,911,758,593 - 16,134,619,913,216 = 2,401,291,845,377 = R' \varphi^6 + C - (6 p^5 \varphi^5 c + 15 p^4 \varphi^4 c^2 + 20 p^3 \varphi^3 c^3 + 15 p^2 \varphi^2 c^4 + 6 p \varphi c^6)$, and is the third Remainder, which therefore agrees with the third Remainder found by the European method in Par. 34, Art. d'', and is therefore $= R''$ Par. 24.

And by the circle of exposition there will successively be found—

For the 4th Period

u''. 4,209,500,228,544, the upper number transferred in the Rank of the Quadratus Cubi $= 6 p'^5$.

γ''. 44,973,293,040, the upper number transferred in the Rank of the Biquadrate $= 15 p'^4$.

t''. 256,258,080, the upper number transferred in the Rank of the Cube $= 20 p'^3$.

ν''. 821,340, the upper number transferred in the Rank of the Square $= 15 p'^2$.

π''. 1,404, the upper number transferred in the Rank of the Latus $= 6 p'$.

ب. 5, the sought number, or fourth figure of the Root $= d$.

ث. 2,116,025,521,169,640,625, the fourth Subtrahend $= 6 p'^5 \varphi^5 d + 15 p'^4 \varphi^4 d^2 + 20 p'^3 \varphi^3 d^3 + 15 p'^2 \varphi^2 d^4 + 6 p' \varphi d^5 + d^6$.

ث''. 285,266,324,208,246,683, the fourth Remainder $= R''$.

For the 5th Period

u'''. 425,466,612,625,293,750, the upper number transferred in the Rank of the Quadratus Cubi $= 6\,p'''^5$.

γ'''. 453,589,139,259,375, the upper number transferred in the Rank of the Biquadrate $= 15\,p'''^4$.

ι'''. 257,904,272,500, the upper number transferred in the Rank of the Cube $= 20\,p'''^3$.

ν'''. 82,485,375, the upper number transferred in the Rank of the Square $= 15\,p'''^2$.

π'''. 14,070, the upper number transferred in the Rank of the Latus $= 6\,p'''$.

ب'''. 6, the sought number, or fifth figure of the Root $= e$.

ت'''. 255,443,315,383,325,683,729,856, the fifth Subtrahend $= 6\,p'''^5\,\varphi^5\,e + 15\,p'''^4\,\varphi^4\,e^2 + 20\,p'''^3\,\varphi^3\,e^3 + 15\,p'''^2\,\varphi^2\,e^4 + 6\,p'''\,\varphi\,e^5 + e^6$.

ث'''. 29,823,008,824,922,999,566,169, the fifth Remainder $= R^{iv}$.

For the 6th Period

u^{iv}. 42,601,119,820,029,578,182,656, the upper number transferred in the Rank of the Quadratus Cubi $= 6\,p^{iv\,5}$.

γ^{iv}. 4,540,535,451,486,781,440, the upper number transferred in the Rank of the Biquadrate $= 15\, p'''^4$.

ι^{iv}. 258,102,288,056,320, the upper number transferred in the Rank of the Cube $= 20\, p'''^3$.

ν^{iv}. 8,252,759,040, the upper number transferred in the Rank of the Square $= 15\, p'''^2$.

π^{iv}. 140,736, the upper number transferred in the Rank of the Latus $= 6\, p'''$.

پ^{iv}. 7, the sought number, or sixth figure of the Root $= f$.

ت^{iv}. 29,823,008,824,922,999,565,181,681,169, the sixth Subtrahend, $= 6\, p'''^5 \varphi^5 f + 15\, p'''^4 \varphi^4 f^2 + 20\, p'''^3 \varphi^3 f^3 + 15\, p'''^2 \varphi^2 f^4 + 6\, p''' \varphi f^5 + f^6$.

ث^{iv}. 987,654,321, the sixth and last Remainder $=$ R^v that is $= r$ of Par. 28) as in the European method Par. 34).

Then by the Analogous operations of Articles ج to ي, to find the Denominator of the Fractional Part of the Root, there will be as follows:

س. 4,260,747,694,908,334,607,381,985,642, the upper number transferred in the Rank of the Quadratus Cubi $= 6\, p^{iv5}$, and since by Par. 25) $p^{iv} = m$ so this is also $= 6\, m^5$.

غ. 45,410,774,905,552,940,176,815, the upper number transferred in the Rank of the Biquadrate $= 15\, p^{iv4} = 15\, m^4$ by Par. 25).

ل. 258,125,396,471,245,260, the upper number transferred in the Rank of the Cube $= 20\,p^{iv3} = 20\,m^3$ by Par. 25).

و. 825,325,162,335, the upper number transferred in the Rank of the Square $= 15\,p^{iv2} = 15\,m^2$ by Par. 25).

ز. 1,407,402, the upper number transferred in the Rank of the Latus $= 6\,p^{iv} = 6\,m$ by Par. 25).

ي. Hence then the sum with the additional Unit $= 4,260,793,105,941,366,382,119,977,455 = 6\,m^5 + 15\,m^4 + 20\,m^3 + 15\,m^2 + 6\,m + 1 = (m+1)^6 - m^6$, and since by Art. ت^{i7}). 987, 654, 321 $= r$ of Par. 28) and by Par. 34). 234,567 $= m$ so $m + \dfrac{r}{(m+1)^6 - m^6} =$ the mixed number

$$234{,}567\ \frac{987{,}654{,}321,}{4{,}260{,}793{,}105{,}941{,}366{,}382{,}119{,}977{,}455,}$$

and is by Par. 28). the approximate 6th Root of the given number M, or 166,571,800,758,593,887,308,296,025, 335,490.

(44.) To prove by tentation that this is the Case, would require the actual involution of the above mixed number, which is the approximate Root, to the sixth Power, a task of vast labour, which, after so much calculation, I willingly decline, as it could serve little purpose except the mere gratification of curiosity, and therefore to illustrate this part of the subject, I shall chuse the following examples in simpler numbers, but which, in all probability, will be thought sufficiently complicated. Besides their present use, they will afterwards be satisfactory for reference in a future part of this paper.

Then by the method of Par. 28.

——First. Let there be sought the approximate 6th Root of 65.——

Here, since $2^6 = 64$, and which is $\angle$ and $3^6 = 729$, which is > 65, so M $= 65$, $m = 2$, and $(m+1)^6 - m^6 = 729 - 64 = 665$, and $r = \mathrm{M} - m^6 = 65 - 64 = 1$. And hence the approximate Root, or $m + \dfrac{r}{(m+1)^6 - m^6} = 2\frac{1}{665}$. Then $\overline{2\frac{1}{665}}|^6 =$

$$2^6 + 6\cdot 2^5 \cdot \frac{1}{665} + 15\cdot 2^4 \cdot \frac{1}{665^2} + 20\cdot 2^3 \cdot \frac{1}{665^3} + 15\cdot 2^2 \cdot \frac{1}{665^4} + 6\cdot 2 \cdot \frac{1}{665^5} + \frac{1}{665^6} \text{ or}$$

$$64 + \frac{6\cdot 2^5 \cdot 665^5 + 15\cdot 2^4 \cdot 665^4 + 20\cdot 2^3 \cdot 665^3 + 15\cdot 2^2\, 665^2 + 6.\,2.\,665 + 1}{665^6}$$

equal to

$$\begin{aligned} 24{,}969{,}477{,}535{,}800{,}000 &= 6\cdot 2^5 \cdot 665^5 \\ 46{,}935{,}108{,}150{,}000 &= 15.2^4.665^4 \\ 47{,}052{,}740{,}000 &= 20.2^3.665^3 \\ 26{,}533{,}500 &= 15.2^2.665^2 \\ 7{,}980 &= 6.2.665 \\ 1 & \end{aligned}$$

$$665^6 = 86{,}482{,}825{,}840{,}140{,}625 \overline{)25{,}016{,}459{,}723{,}231{,}481,} \; (0 + 64 = 64$$

Hence the deficiency in this case is $65 - 64 \dfrac{25{,}016{,}459{,}723{,}231{,}481}{86{,}482{,}825{,}840{,}140{,}625} =$

$$\frac{61{,}466{,}366{,}116{,}909{,}144}{86{,}482{,}825{,}840{,}140{,}625}$$

——Second. Let there be sought the approximate 6th Root of 396——

Here $M = 396$, m is the same as before, and $r = 396 - 64 = 332$. And hence the approximate Root is $2\frac{332}{665}$. Then $\overline{2\frac{332}{665}}|^6 =$

$$2^6 + 6\cdot 2^5\cdot\frac{332}{665} + 15\cdot 2^4\cdot\frac{332^2}{665^2} + 20\cdot 2^3\cdot\frac{332^3}{665^3} + 15\cdot 2^2\cdot\frac{332^4}{665^4} + 6\cdot 2\cdot\frac{332^5}{665^5} + \frac{332^6}{665^6} \text{ or}$$

$$64 + \frac{6\cdot 2^5\cdot 665^5\cdot 332 + 15\cdot 2^4\cdot 665^4\cdot 332^2 + 20\cdot 2^3\cdot 665^3\cdot 332^3 + 15\cdot 2^2\cdot 665^2\cdot 332^4 + 6\cdot 2\cdot 665\cdot 332^5 + 332^6}{665^6} \text{ or}$$

$$\begin{array}{rrl}
 & 3{,}289{,}866{,}541{,}885{,}600{,}000 & = 6\cdot 2^5\cdot 665^5\cdot 332 \\
 & 5{,}173{,}375{,}360{,}725{,}600{,}000 & = 15\cdot 2^4\cdot 665^4\cdot 332^2 \\
 & 1{,}721{,}865{,}282{,}968{,}320{,}000 & = 20\cdot 2^3\cdot 665^3\cdot 332^3 \\
 & 322{,}364{,}252{,}224{,}896{,}000 & = 15\cdot 2^2\cdot 665^2\cdot 332^4 \\
 & 32{,}187{,}949{,}395{,}087{,}360 & = 6\cdot 2\cdot 665\cdot 332^5 \\
 & 1{,}339{,}147{,}769{,}319{,}424 & = 332^6 \\
\hline
665^6 = 86{,}482{,}825{,}840{,}140{,}625) & 15{,}540{,}998{,}534{,}968{,}822{,}784 & (179 + 64 = 243 \\
 & 15{,}480{,}425{,}825{,}385{,}171{,}875 & \\
\hline
 & 60{,}572{,}709{,}583{,}650{,}909 &
\end{array}$$

Hence the deficiency in this case is $396 - 243\frac{60{,}572{,}709{,}583{,}650{,}909}{86{,}482{,}825{,}840{,}140{,}625}$ a quantity no less than $152\frac{25{,}910{,}116{,}256{,}489{,}716}{86{,}482{,}825{,}840{,}140{,}625}$

——Third. Let there be sought the approximate 6th Root of 397——

Here $M = 397$, m is the same as before, and $r = 397 - 64 = 333$. And hence the approximate Root is $2\frac{333}{665}$. Then $\overline{2\frac{333}{665}}|^6 =$

$$2^6 + 6\cdot 2^5\cdot\frac{333}{665} + 15\cdot 2^4\cdot\frac{333^2}{665^2} + 20\cdot 2^3\cdot\frac{333^3}{665^3} + 15\cdot 2^2\cdot\frac{333^4}{665^4} + 6\cdot 2\cdot\frac{333^5}{665^5} + \frac{333^6}{665^6} \text{ or}$$

$$64 + \frac{6\cdot 2^5\cdot 665^5\cdot 333 + 15\cdot 2^4\cdot 665^4\cdot 333^2 + 20\cdot 2^3\cdot 665^3\cdot 333^3 + 15\cdot 2^2\cdot 665^2\cdot 333^4 + 6\cdot 2\cdot 665\cdot 333^5 + 333^6}{665^6} \text{ or}$$

$$
\begin{array}{rl}
8{,}314{,}836{,}019{,}421{,}400{,}000 = & 6\cdot 2^5\cdot 665^5\cdot 333 \\
5{,}204{,}587{,}207{,}645{,}350{,}000 = & 15\cdot 2^4\cdot 665^4\cdot 333^2 \\
1{,}737{,}471{,}218{,}191{,}380{,}000 = & 20\cdot 2^3\cdot 665^3\cdot 333^3 \\
326{,}265{,}741{,}912{,}253{,}500 = & 15\cdot 2^2\cdot 665^2\cdot 333^4 \\
32{,}675{,}636{,}708{,}806{,}140 = & 6\cdot 2\cdot 665\cdot 333^5 \\
1{,}363{,}532{,}208{,}525{,}369 = & 333^6 \\
\hline
665^6 = 86{,}482{,}825{,}840{,}140{,}625)\ 15{,}617{,}199{,}356{,}087{,}715{,}009\ (& 180 + 64 = 244 \\
15{,}566{,}908{,}651{,}225{,}312{,}500 & \\
\hline
50{,}290{,}704{,}862{,}402{,}509 &
\end{array}
$$

Hence the deficiency in this case is $397 - 244\dfrac{50{,}290{,}704{,}862{,}402{,}509}{86{,}482{,}825{,}840{,}140{,}625}$ a quantity yet greater than before, being no less than $152\dfrac{36{,}192{,}120{,}977{,}738{,}116}{86{,}482{,}825{,}840{,}140{,}625}$

—— Fourth. Let there be sought the approximate 6th Root of 728 ——

Here $M = 728$, m is the same as before $r = 728 - 64 = 664$. And hence the the approximate Root is $2\frac{664}{665}$. Then $2\overline{\frac{664}{665}}|^6$ is

$$2^6 + 6\cdot 2^5\cdot\frac{664}{665} + 15\cdot 2^4\cdot\frac{664^2}{665^2} + 20\cdot 2^3\cdot\frac{664^3}{665^3} + 15\cdot 2^2\cdot\frac{664^4}{665^4} + 6\cdot 2\cdot\frac{664^5}{665^5} + \frac{664^6}{665^6} \text{ or}$$

$$64 + \frac{6\cdot 2^5\cdot 665^5\cdot 664 + 15\cdot 2^4\cdot 665^4\cdot 664^2 + 20\cdot 2^3\cdot 665^3\cdot 664^3 + 15\cdot 2^2\cdot 665^2\cdot 664^4 + 15\cdot 2\cdot 665\cdot 664^5 + 664^6}{665^6} \text{ or}$$

$$
\begin{array}{rl}
16{,}579{,}733{,}083{,}771{,}200{,}000 = & 6\cdot 2^5.665^5.664 \\
20{,}693{,}501{,}442{,}902{,}400{,}000 = & 15\cdot 2^4.665^4.664^2 \\
13{,}774{,}922{,}263{,}746{,}560{,}000 = & 20\cdot 2^3.665^3.664^3 \\
5{,}157{,}828{,}035{,}598{,}336{,}000 = & 15.2^2.665^2.664^4 \\
1{,}030{,}014{,}380{,}642{,}795{,}520 = & 6.2.665\cdot 664^5 \\
85{,}705{,}457{,}236{,}443{,}136 = & 665^5 \\
\hline
665^6 = 86{,}482{,}825{,}840{,}140{,}625)\ 57{,}321{,}704{,}663{,}897{,}734{,}656\ (& 662 + 64 = 726 \\
57{,}251{,}630{,}706{,}173{,}093{,}750 & \\
\hline
70{,}073{,}957{,}724{,}640{,}906 &
\end{array}
$$

Hence the deficiency in this case is $728 - 726 \frac{70,073,957,724,640,906}{86,482,825,840,140,625}$ and is again diminished to $1 \frac{16,408,868,115,499,719}{86,482,825,840,140,625}$

45.) It is obvious that the operation and exposition may easily be extended to any other power, by the method of Par. 30), and by having as many Ranks as there are units in the index of the power and analogically adapting the circle of operations to these Ranks. It would be both curious and entertaining to investigate those properties of figurate numbers by which the upper transferred number in each Rank becomes the found figures of the Root involved to the index of that Rank and multiplied by the proper co-efficient of the Binomial Theorem, and the succeeding operations finally produce for each period, the last found figures of the Root multiplied by ten, and having then added the next figure of the Root, and the sum being involved to the index of the given power, and then having subtracted the last found figures of the Root multiplied by ten, and involved to the index of the given power. But such an inquiry would swell the present paper beyond all bounds of moderation, and must therefore be omitted.

46.) From all this ample detail, it appears that the advantages proposed by the Arabian Arithmeticians in the complicated apparatus of calculation required for the Pulpit Diagram, is first, that the Root may be extracted, as it were mechanically, without previous knowledge of the co-efficients of the Binomial Theorem, which are here produced by the mere arrangement of the Ranks; and next, that throughout all the intricacies of this operation it should never be necessary to multiply by a number higher than a Digit. I shall not undertake to decide, whether these objects were sufficiently important to justify the employment of means so

laborious, but shall only observe with respect to the last of them, that we may hence form some judgment how much the old Arithmeticians must have been perplexed and retarded by the labour of long multiplication. We, who enjoy the benefits of the great discovery of Logarithms, can now scarcely form an estimate of the difficulties with which they had to contend from this want, and the facilities which we enjoy from their use. While, therefore, the Arabian method of extraction may inspire us with more gratitude to Lord NAPIER, we must not too hastily condemn it as uselessly laborious, till we can show that, without a knowledge of his discovery we could have more happily succeeded in the facilitating and abbreviation of calculation. Should, after all these considerations, the intention of the Arabian operation be thought of little value, and the labour employed to accomplish it misused, yet the artful contrivances by which it is attained, and the skilful adaptation for this purpose of the simple principle of the variation of the signification of symbols from the variation of their situation, must, I think, in justice, always cause the Pulpit Diagram to be considered a deserving monument of Arabic ingenuity.

47.) It now remains, according to the originally proposed arrangement—

IV. That I should give the extract from the original Ayoun-ul-Hisab, containing the above Rule, accompanied by a translation, and then offer some explanatory Remarks.

48.) And the extract is as follows :

مطلب عاشر از كتاب عيون الحساب

فى استخراج الضلع للمضلعات على الوجه العام نرسم شكلا منبريا متصاعد الدرجات تساوي عدة الدرجات ادوار المضلع المفروض و نقسم عرض كل درجة بعدة عدد منزلة ذلك المضلع الا العليا فانها نقسم بعدة المراتب الموجودة من آخر الادوار

ثم نخرج من مواضع القسمة خطوطا طولية من سموك الدرجات الى حد يقتضيه العمل و نخرج عروض الدرج الى يسر الخطوط الطولية . نقسم ايمن الطوليات بعدة منزلة ذلك المضلع و يكفي ان يكون طول على الاقسام قدر ما يسع رقمين كسموك سائر الدرج و طول اسفلها بقدر ما يسع دورا من المضلع طولا و يسمى اسفل الاقسام صف الضلع وفوقه صف المال وفوقه صف الكعب وهكذا الى ان ينتهي الى صف العدد ويسمى خارج الجدول سطر الخارج وقد يطلق على القسم الذي تحت صف العدد ثاني العدد و على ما تحته ثالث العدد وهكذا الى ان ينتهي الى صف الضلع ثم نبتدي باليمين فنرسم الدور الاول من العدد في مربعات الدرجة الاولى و الدور الثاني في مربعات الدرجة الثانية وهكذا الى ان نرسم المراتب في المربعات الصغار كل مرتبة في مربع ثم نطلب اكثر عدد من الاحاد يمكن نقصان مضلعه الذي في منزلة المضلع المفروض من المرتبة المنطقة الاخيرة و ما في يسارها و نحن وضعنا مضلعات الاثنين الى التسعة الى مال مال كعب الكعب الذي في المنزلة العاشرة في جدول ليسهل وجدان ذلك و هو هذا فاذا وجدناه نضعه في سطر الخارج و اسفل صف الضلع محاذيا لاخرى المراتب المنطقة و نرسم ماله وهو حاصل ضرب الفوقاني في التحتاني في اسفل صف المال و مضروب الفوقاني في المال و هو كعبه في اسفل صف الكعب و هكذا الى ان نضرب الفوقاني فيما هو في صف ثاني العدد فنرسم الحاصل في صف العدد تحت مارسم هناك و يجب ان نرسم تلك الحواصل في الصفوف بحيث يحاذي احادها جميعا للمفرد الفوقاني فينقص الحاصل الاخير مما يحاذيه من سطر العدد و نرسم الباقي تحت الخط العرضي المرسوم فوق الدور السابق ليصير مع ذلك الدور سطر واحدا ثم نزيد الفوقاني على ما في صف الضلع مرة لصف ثاني العدد و نضربه في المجتمع . نزيد الحاصل على ما في صف المال و نضربه في المجتمع هناك و نزيد الحاصل على ما في صف الكعب و هكذا الى ان نضربه في المجتمع في صف ثالث العدد و ينقل المجتمع الى اليمين في هذا الصف بمرتبة ثم نزيد الفوقاني مرة ثانية على ما في صف الضلع لصف ثالث العدد و نضربه في المجتمع و نزيد الحاصل على ما في صف المال و نضربه في المجتمع و نزيد الحاصل على ما في صف الكعب وهكذا الى ان يزاد مضروبه في المجتمع في صف رابع العدد على ما في صف ثالثه و ينقل المجتمع الى اليمين بمرتبتين ثم نزيد الفوقاني على ما في صف الضلع مرة ثالثة لصف رابع العدد و نعمل به ما عرفت و هكذا الى ان ينتهي الى زيادة الفوقاني على ما في صف الضلع لذلك الصف و ينقله الى اليمين فيحاذي احاده المرتبة الثانية من الدور المقدم و لتعلم

ان نرسم تلك الحواصل فى الصفوف بحيث يحاذي احادها المفرد الفوقاني و نرسم حاصل الجمع فوق المجموعين بعد محوهما بخط عرضي فيكون ما فوق الخطوط في غير صف العدد ثابتا لكون وجه العمل في غير ذلك الصف الى الفوق فان حاصل ضرب الفوقاني فيما رسم في كل صف يزاد على ما في صف يكون فوقه ثم نطلب اكثر احاد اذا رسمناه فى السطر الخارج محاذيا لاولى مراتب الدور المتقدم و تحته في اسفل صف الضلع يمين المرسوم هناك وضربناه فيما هو في صف الضلع وزدنا الحاصل على ما في صف المال ثم ضربناه فيما هو في صف المال وزدنا الحاصل على ما في صف الكعب وهكذا الى ان ضربناه فى المجتمع في صف ثانى العدد ورسم الحاصل في صف العدد اى امكن نقصانه مما يحاذيه فاذا وجدناه وعملنا به ما عرفت رسمنا الباقي تحت الخط العرضي المرسوم فوق الدور السابق يصير مع مراتب الدور السابق عليه سطرا واحدا ثم نزيد الفوقاني على ما في صف الضلع مرة بعد اخرى لاجل صف صف و نعمل به ما مر فان لم يوجد عدد بهذه الصفة نضع مكانه صفرا وننقل ما فى الصفوف التي تحت صف العدد مرة اخرى الى اليمين كما مر ما في ثانى العدد بمرتبة وما في ثالثه بمرتبتين وهكذا ثم نطلب اكثر احاد لنعمل به ما ذكرناه و هكذا الى ان ينقص حاصل ضرب الفوقانى الموضوع بازاء احاد العدد فى المجتمع في صف ثانى العدد من المرسوم في صف العدد فان لم يبق شيء فالعدد منطق و المرسوم فى السطر الخارج ضلعه الاول و ان بقي شيء فهو اصم و ضلعه الاول بالتقريب الاصطلاحي ما فى السطر الخارج مع كسر صورته الباقية ومخرجه ما بين هذا المضلع المرسوم المذكور ولما نزيد عليه بواحد فنعامل المفرد الموضوع بازاء احاد العدد معاملتنا بغيره سوى النقل فتجمع ما فى الصفوف التي تحت صف العدد باجمعها و نزيد عليه واحدا فهو المخرج المذكور و المضلع الحاصل من الضلع الماخوذ على هذا ينقص عن العدد ابدا و يتفاحش التفاوت فى المضلعات غير المال و لتحصيل مخرج الكسر في عمل الكعب يمكن ان نضرب السطر الخارج فيما نزيد عليه بواحد و الحاصل فى الثلثة و نزيد عليه واحدا

49). Previously to giving the translation, I must remind the reader, that the Arabs, writing from right to left, call the most right-hand Period of the given number—the first, and the most left-hand, or highest in the Pulpit Diagram—the last, contrary to the directions of Par. 32). Consequently, what by the Author of the Ayoun-ul-Hisab is called the last

period, is, in my demonstration, called the first; and what he calls the former or preceding period, is, in my demonstration, called the next, or following period, and so on. It must also be noticed, that throughout this Extract, the word breadth means across the page from right to left, and length means down the page from top to bottom.

50). Translation.

"Chapter Tenth. From the Book *called* the Ayoun-ul-Hisab, or Sources of Arithmetic. Of the extraction of the Latus of Powers generally.

Let us draw a Pulpit Diagram of ascending steps, the number of which *steps* is equal to the number of periods of the given Power. Then let us divide the breadth of each step *into places*, the number *of which* are according to the number of the Index, except the highest step, and we are to divide that according to the number of the places of figures which are found in the last of the periods. Then let us draw from the points of division longitudinal lines *which*, with *the lines which form* the height of the step, *are to be drawn* to such a distance as the operation may require. Then let us produce the breadth of the step to the most left hand of the longitudinal lines, and let us divide the most right hand of the longitudinal lines *into divisions, or ranks*; according to the number of the Index of the Power, and it is sufficient that the length of the divisions be great enough to contain *the same number* of figures as the height of all the steps, and the length of the lowest of them *be great enough* to contain, in length, one period of the given Power. And let the lowest of the divisions be called the Rank of the Latus, and *the division* above it the Rank of the Square, and *the division* above it the Rank of the Cube, and so on till we reach the Rank of the number; and *the figures* exterior to the Diagram are called the external Row, and then to the division which is

below the Rank of the number there is applied *the name of* second *Rank* of the number, and to *that Rank* which is below it there is applied the name of third *Rank* of the number, and so on till we reach to the Rank of the Latus. Then let us begin from the right hand, and let us write the first period of the number in the Squares of the first step, and the second period in the Squares of the second step, and so on till we have written *all* the places *of figures* in the small Squares, each place in a Square. Then let us seek the greatest number of the Digits, which being involved to the Index of the given number, can be subtracted from, *i. e. is less than* the last dotted place, and *the figures* to its left hand. Now, if we were to arrange in a Table the Powers of the numbers from 2 to 9 to the Quadratus quadrati cubi cubi which is to the Index 10, that would facilitate the finding of this *sought number.* And when we have found it, let us place it in the external Row, and *call that the top number which hence is the first found figure of the Root, and let us also put it in* the lowest part of the Rank of the Latus, opposite to the last dotted place, and *call that the bottom number*, and let us write its Square (and that is the product of the top number into the bottom) in the lowest *part* of the Rank of the Square, and *let us write* the product of the *top number* into the Square, and that is its Cube in the lowest part of the Rank of the Cube, and thus, until we multiply the top number into that which is in the second Rank of the number. Then let us write this product in the Rank of the number below what was written there and below that, there is written the products in the Ranks, so that their units should all be opposite the single top *figure.* And let us subtract the last product from that which is opposite it in the Rank of the number, and let us write the Remainder below the latitudinal line drawn above the former period, so that it may be one line with this period. Then let us add the top *number* to that which is in the Rank of the Latus, once, for the second Rank of the number, and let us multiply it, *the top number* into the sum, and let us add the product to that which is in the Rank of the Square, and let us multiply it into the sum there,

and let us add the product to that which is in the Rank of the Cube, and thus until we multiply it into the sum in the third Rank of the Number, and transfer the sum *of this product and the number in the second Rank of the number*, to the right hand in this Rank one place. Then let us add the top *number* the second time to that which is in the Rank of the Latus for the third Rank of the number, and let us multiply it into the sum, and let us add the product to that which is in the Rank of the Square, and let us multiply it into the sum, and let us add the product to that which is in the Rank of the Cube, and so on till we have added its product into the sum in the fourth Rank of the Number to that which is in the third Rank, and let us transfer the sum to the right hand two places, then let us add the top number to that which is in the Rank of the Latus a third time, for the fourth Rank of the Number, and let us operate with it as I have explained, and so on until we arrive at the addition of the top number to that which is in the Rank of the Latus for that same Rank, and its transference to the right hand, so that its units should be opposite the second place of the preceding period. And let it be known that we write the products in the Ranks, so that their units should be under the single top figure, and we write the result of the addition above the items after erasing them by a latitudinal line, and this will be *the Number* which is above the lines in *all the Ranks*, except the Rank of the Number, because the progress of the operation in *all*, except that Rank, is upwards. And that the product of the multiplication of the top *Number* into that which is written in each Rank is added to that which is in the Rank above it. Then let us seek the greatest of the units, which, if we write it in the external Row opposite to the first place of the preceding period, and below it in the lowest *part* of the Rank of the Latus to the right of the Number written there and multiply it into that which is in the Rank of the Latus, and add the product to that which is in the Rank of the Square, then multiply it into that which is in the Rank of the Square, and add the product to that

which is in the Rank of the Cube, and so on until it be multiplied into the sum in the second Rank of the number, and the product written in the Rank of the number this can be substracted from, *i. e. is less than* that which is opposite to it, and when we have found it, *such a number*, let us operate with it as I have explained, and let us write the remainder below the latitudinal line drawn over the former period, so that it may be one line with the places of the former period *annexed* to it. Then let us add the *new found* top number to that which is in the Rank of the Latus one time after another, for the Rank one after another, and let us operate with it as was done before, and if we cannot find a number with this property, let us put cypher in its place, and transfer that which is in the Ranks, which are below the Rank of the number, once again to the right hand as was done before, that which is in the second *Rank* of the number one place, and that which is in the third, two places, and so on. Then let us seek the greatest of the units and operate with it as we have detailed *above*, and so on until the product of the top *number* placed opposite the units of the *original given* number into the sum in the second Rank of the number be substracted from that which is written in the Rank of the number, and *if* nothing remains, that number is rational, and the *number* written in the external Row, *i. e. above the Pulpit Diagram*, are its Latus Primum, and if any thing remains then it is Surd, and its Latus Primum, technically *speaking*, by approximation, is that which is in the external Row, with a fraction of which the numerator is the remainder, and the denominator is that which is between, *i. e. is the difference between* the power of this said written number, *and the power of (this number* having unit added to it). Then let us employ the single *figure* placed opposite the units of the given number as we employed the other numbers, except the transference of them, and let that which is in *all* the Ranks below the Rank of the number be added together into one sum, and let us add to that unit, and that is the said denominator, and the power produced

from the Latus thus taken, is always less than the *given* number. And this difference is considerable in every power except the Square. And for finding the denominator of the fraction in the operation on the Cube, we may multiply the *figures of the* external Row into itself, increased by unit, and the product into three, and add to that unit."

After the prolix detail in the former part of this paper, it would be very useless to make many comments on the above extract, and I have only therefore to add a few cursory observations.

51). The directions given for erazing the added items, and merely writing their sum in the same place, will account for the Ranks being in the extract directed to be so much shorter than they appear in the full Diagram given by me.

52). The Rationale of the directions given for the treatment of cypher, when it occurs as one of the found figures of the Root, is so easily understood, that it would be needless to elucidate them by any explanation.

53). The last sentence respecting the denominator of the fraction in the Cube is also easily comprehended. The figures of the external Row are those of the approximate integral Root written above the Pulpit Diagram, and are consequently $= m$ of Par. 28). Then the Rule of the Text evidently is $\left[\left[m \times \boxed{m+1}\right] \times 3\right] + 1 = 3m^2 + 3m + 1 = (m+1)^3 - m^3$.

54). What I have here said of the increase of the error of deficiency corresponding to the increase of the index of the power, would, if true, be

very tedious to demonstrate, and excessively laborious to exemplify. I shall not therefore, by entering upon this task, render this very long paper yet unnecessarily longer, but as a proof of this assertion I refer to the great deficiency in the 2d and 3d example of Par. 44). This imperfection, the Arabians seem to have been fully sensible of, and anxious to remedy; and I shall conclude with an account of their attempts for this purpose in the extraction of the Square Root. Of these I have not been able to obtain the Arabic original, but their detail is as follows.

55). Let on the principles of Par. 28). A, be a surd to the 2d Power, of which a, is the approximate integral Square Root, so that $a^2 \angle$ A and $(a+1)^2$ or $a^2 + 2a + 1$ is $>$ A. Then let $A - a^2 = r$ and $a^2 + r = A$. Then evidently $r \angle 2a + 1$ and the Root, to be assumed is $a + \frac{r}{(a+1)^2 - a^2} = a + \frac{r}{2a+1}$. Then the deficiency arising from this assumption is evidently $A - \left(a + \frac{r}{2a+1}\right)^2 = (a^2 + r) - \left(a^2 + \frac{2ar}{2a+1} + \frac{r^2}{(2a+1)^2}\right) = \frac{(2a+1)r - r^2}{(2a+1)^2}$. Now since $r \angle 2a + 1$ so r^2 or $r\,r \angle (2a+1)r$, and hence this can never be a negative expression, but must be always positive and real.

56). Then the Arabian Arithmeticians observe that the deficiency incurred by employing this assumed Root as the true Root, must always be less than $\frac{1}{4}$. To prove this, if to a be assigned any constant value, then r may be considered as a variable. For the only known properties of r are that it should be real, and $\angle 2a + 1$. Hence if a be put $= 1$, then $2a + 1 = 3$, and r is expoundable by 1 and 2. If a be put $= 2$, then r is expoundable by 1, 2, 3, 4. If a be put $= 3$, then r is expoundable by 1, 2, 3, 4, 5 or 6, and so on. The shortest and most

direct way therefore of proceeding will be to enquire upon these conditions what is the maximum value of this expression $\frac{(2a+1)r - r^2}{(2a+1)^2}$. Then for this purpose let it be put into Fluxions, and it will become $2\dot{a}r + \dot{r} - 2r\dot{r} = 0$, and hence $2\dot{a} + 1 = 2\dot{r}$ and $r = a + \frac{1}{2}$. Hence it appears that the greatest deficiency is when $r = a + \frac{1}{2}$. Substitute this value of r and the expression $\frac{(2a+1)r - r^2}{(2a+1)^2}$ becomes $\frac{(a+\frac{1}{2})^2}{(2a+1)^2} = \frac{(a+\frac{1}{2})^2}{4(a+\frac{1}{2})^2} = \frac{1}{4}$. Now since a is an integer, so $a + \frac{1}{2}$ is evidently a fraction. But r is also an integer, and hence can never be equal to $a + \frac{1}{2}$. That is the value of r can never be such as to render the deficiency a maximum. In other words, the deficiency must always be $\angle \frac{1}{4}$.

57.) As an illustration of this, let us take the following three sets of examples.

1

Let $A = 2 = 1^2 + 1$. Then $a = 1$ and $r = 1$ and $2a + 1 = 2$, and assumed Root $= 1\frac{1}{3}$.

Then $\overline{1\frac{1}{3}}|^2 = 1 + \frac{2}{3} + \frac{1}{9} = 1\frac{7}{9}$, and the deficiency $= \frac{2}{9}$.

Let $A = 3 = 1^2 + 2$. Then $a = 1$, $r = 2$, and assumed Root $= 1\frac{2}{3}$.

Then $\overline{1\frac{2}{3}}|^2 = 1 + \frac{4}{3} + \frac{4}{9} = 2\frac{7}{9}$, and deficiency $= \frac{2}{9}$.

2

Let $A = 5 = 2^2 + 1$. Then $a = 2$, $r = 1$ and $2a + 1 = 5$ and assumed Root $= 2\frac{1}{5}$.

Then $\overline{2\frac{1}{5}}|^2 = 4 + \frac{4}{5} + \frac{1}{25} = 4\frac{21}{25}$, and deficiency $= \frac{4}{25}$.

Let A $= 6 = 2^2 + 2$. Then $a = 2$, $r = 2$, and assumed Root $= 2\frac{2}{5}$.

Then $\overline{2\frac{2}{5}}|^2 = 4 + \frac{8}{5} + \frac{4}{25} = 5\frac{12}{25}$, and deficiency $= \frac{6}{25}$.

Let A $= 7 = 2^2 + 3$. Then $a = 2$ $r = 3$, and assumed Root $= 2\frac{3}{5}$.

Then $\overline{2\frac{3}{5}}|^2 = 4 + \frac{12}{5} + \frac{9}{25} = 6\frac{19}{25}$, and deficiency $= \frac{6}{25}$.

Let A $= 8 = 2^2 + 4$. Then $a = 2$, $r = 4$, and assumed Root $= 2\frac{4}{5}$.

Then $\overline{2\frac{4}{5}}|^2 = 4 + \frac{16}{5} + \frac{16}{25} = 7\frac{21}{25}$, and deficiency $= \frac{4}{25}$.

3

Let A $= 10 = 3^2 + 1$. Then $a = 3$ $r = 1$ and $2\ a + 1 = 7$, and assumed Root $= 3\frac{1}{7}$.

Then $\overline{3\frac{1}{7}}|^2 = 9 + \frac{6}{7} + \frac{1}{49} = 9\frac{43}{49}$, and deficiency $= \frac{6}{49}$.

Let A $= 11 = 3^2 + 2$. Then $a = 3$, $r = 2$, and assumed Root $= 3\frac{2}{7}$.

Then $\overline{3\frac{2}{7}}|^2 = 9 + \frac{12}{7} + \frac{4}{49} = 10\frac{39}{49}$, and deficiency $= \frac{10}{49}$.

Let A $= 12 = 3^2 + 3$. Then $a = 3$, $r = 3$, and assumed Root $= 3\frac{3}{7}$.

Then $\overline{3\frac{3}{7}}|^2 = 9 + \frac{18}{7} + \frac{9}{49} = 11\frac{37}{49}$, and deficiency $= \frac{12}{49}$.

Let A $= 13 = 3^2 + 4$. Then $a = 3$ $r = 4$, and assumed Root $= 3\frac{4}{7}$.

Then $\overline{3\frac{4}{7}}|^2 = 9 + \frac{24}{7} + \frac{16}{49} = 12\frac{37}{49}$, and deficiency $= \frac{12}{49}$.

Let A $= 14 = 3^2 + 5$. Then $a = 3\ r = 5$, and assumed Root $= 3\frac{5}{7}$.

Then $\overline{3\frac{5}{7}}|^2 = 9 + \frac{30}{7} + \frac{25}{49} = 13\frac{39}{49}$, and deficiency $= \frac{10}{49}$.

Let A $= 15 = 3^2 + 6$. Then $a = 3\ r = 6$, and assumed Root $= 3\frac{6}{7}$.

Then $\overline{3\frac{6}{7}}|^2 = 9 + \frac{36}{7} + \frac{36}{49} = 14\frac{43}{49}$, and deficiency $= \frac{6}{49}$.

From these examples we may observe—

58). That the deficiencies are in every case $\angle \frac{1}{4}$ according to Par. 57).

59). That when the remainder is very great or very small, the deficiency is small, but when the remainder is a medium, that is, as it approaches to be equal to $a + \frac{1}{2}$, the deficiency becomes great, and is greatest when the deficiency is $= a$, and $= a + 1$. That is, it is greatest in the 3d set of cases when $r = 3$ and $= 4$. In the 2d set of cases when $r = 2$ and $= 3$. And in the 1st set of cases, of course when $r = 1$ and $= 2$. This observation is confirmed by the examples of Par. 44). For in the 1st and 4th examples where $r = 1$ and $= 728$ that is very small and very great, the deficiency is small, and in the 2d and 3d examples when $r = 332$ and $= 333$, that is, a medium, the deficiency is great.

60). And that when A is equally distant from a^2 below, and $(a + 1)^2$ above the deficiency is equal. That is the deficiency is equal when A is equal to $a^2 + 1$ and $(a + 1)^2 - 1$, and the deficiency is equal when A is equal to $a^2 + 2$ and $(a + 1)^2 - 2$, and the deficiency is equal when A is equal to $a^2 + 3$ and $(a + 1)^2 - 3$, and so on. Thus—

In the 1st set of Cases.

When A $= 2 = 1^2 + 1$, and when A $= 3 = 2^2 - 1$, the deficiency is the same, viz. $\frac{2}{9}$.

In the 2d set of Cases.

When $A = 5 = 2^2 + 1$, and when $A = 8 = 3^2 - 1$, the deficiency is the same, viz. $\frac{4}{25}$.

When $A = 6 = 2^2 + 2$, and when $A = 7\ 3^2 - 2$, the deficiency is the same, viz. $\frac{6}{25}$.

In the 3d set of Cases.

When $A = 10 = 3^2 + 1$, and when $A = 15 = 4^2 - 1$, the deficiency is the same, viz. $\frac{6}{49}$.

When $A = 11 = 3^2 + 2$, and when $A = 14 = 4^2 - 2$, the deficiency is the same, viz. $\frac{10}{49}$.

When $A = 12 = 3^2 + 3$, and when $A = 13 = 4^2 - 3$, the deficiency is the same, viz. $\frac{12}{49}$.

This is easily proved generally, for since by Par. 57) the excess of $a^2 + r$ over the Square of its assumed Root, is $\frac{(2a+1)r - r^2}{(2a+1)^2}$ let the surd power whose Root is required be $(a+1)^2 - r$. This is $= a^2 + 2a + 1 - r$, and hence the remainder is in this case $2a + 1 - r$. This being the numerator, and $2a + 1$ still being the denominator, the assumed Root is in this case $a + \frac{2a+1-r}{2a+1} = a + 1 - \frac{r}{2a+1}$ and hence the deficiency is $(a+1)^2 - r - \left(a + 1 - \frac{r}{2a+1}\right)^2 = \frac{(2a+1)r - r^2}{(2a+1)^2}$ the same expression as before.

61. But this observation will by no means apply to powers higher than the Square, as will appear from the following examples in Cubes.

Let A be a surd Cube, of which a is the approximate Root, and r the remainder as before. Then on the principles of Par. 28), the assumed Root of A is $a + \frac{r}{(a+1)^3 - a^3} = a + \frac{r}{3a^2 + 3a + 1}$. Then

Let $A = 2 = 1^3 + 1$. Then $a = 1$, $r = 1$, and $3a^2 + 3a + 1 = 7$ and assumed Root $= 1\frac{1}{7}$.

Then $\overline{1\frac{1}{7}}|^3 = 1 + \frac{3}{7} + \frac{3}{49} + \frac{1}{343} = 1\frac{169}{343}$, and deficiency $= \frac{174}{343}$.

Let $A = 3 = 1^3 + 2$. Then $a = 1$, $r = 2$, and assumed Root $= 1\frac{2}{7}$.

Then $\overline{2\frac{2}{7}}|^3 = 1 + \frac{6}{7} + \frac{12}{49} + \frac{8}{343} = 2\frac{43}{343}$, and deficiency $= \frac{300}{343}$.

Let $A = 4 = 1^3 + 3$. Then $a = 1$, $r = 3$, and assumed Root $= 1\frac{3}{7}$.

Then $\overline{1\frac{3}{7}}|^3 = 1 + \frac{9}{7} + \frac{27}{49} + \frac{27}{243} = 2\frac{314}{343}$, and deficiency $= 1\frac{28}{343}$.

Let $A = 5 = 1^3 + 4$. Then $a = 1$, $r = 4$, and assumed Root $= 1\frac{4}{7}$.

Then $\overline{1\frac{4}{7}}|^3 = 1 + \frac{12}{7} + \frac{48}{49} + \frac{64}{343} = 3\frac{302}{343}$, and deficiency $= 1\frac{41}{343}$.

Let $A = 6 = 1^3 + 5$. Then $a = 1$, $r = 5$, and assumed Root $= 1\frac{5}{7}$.

Then $\overline{1\frac{5}{7}}|^3 = 1 + \frac{15}{7} + \frac{75}{49} + \frac{125}{343} = 5\frac{13}{343}$, and deficiency $= \frac{330}{343}$.

Let $A = 7 = 1^3 + 6$. Then $a = 1$, $r = 6$, and assumed Root $= 1\frac{6}{7}$.

Then $\overline{1\tfrac{6}{7}}|^3 = 1 + \tfrac{18}{7} + \tfrac{108}{49} + \tfrac{216}{343} = 6\tfrac{139}{343}$, and deficiency $= \tfrac{204}{343}$.

62). It also appears from hence that the deficiency in the form $a^3 + r$, is always less than in the form $(a + 1)^3 - r$. For—

When $A = 2 = 1^3 + 1$, deficiency $= \tfrac{174}{343}$, and when $A = 7 = 2^3 - 1$, there is a greater deficiency $\tfrac{204}{343}$.

When $A = 3 = 1^3 + 2$, deficiency $= \tfrac{300}{343}$, and when $A = 6 = 2^3 - 2$, there is a greater deficiency $\tfrac{330}{343}$.

When $A = 4 = 1^3 + 3$, deficiency $= 1\tfrac{29}{343}$, and when $A = 5 = 2^3 - 3$, there is a greater deficiency $1\tfrac{41}{343}$.

This is also confirmed by the examples of Par. 44), for there the deficiency in the first example, or $2^6 + 1$, is less than that in the fourth example, or $3^6 - 1$. And the deficiency in the second example, or $2^6 + 332$, is less than that in the third example, or $3^6 - 332$.

63). And we may also observe that the deficiencies produced by assuming the Cube Root are greater than by assuming the Square Roots of the same number. Thus—

By the assumed $\sqrt[\frac{1}{2}]{2}$ deficiency is $\tfrac{2}{9}$.	By the assumed $\sqrt[\frac{1}{3}]{2}$ there is greater deficiency $\tfrac{174}{343}$.
By the assumed $\sqrt[\frac{1}{2}]{3}$ deficiency is $\tfrac{2}{9}$.	By the assumed $\sqrt[\frac{1}{3}]{3}$ there is greater deficiency $\tfrac{300}{343}$.
By the assumed $\sqrt[\frac{1}{2}]{5}$ deficiency is $\tfrac{4}{25}$.	By the assumed $\sqrt[\frac{1}{3}]{5}$ there is greater deficiency $1\tfrac{41}{343}$.
By the assumed $\sqrt[\frac{1}{2}]{6}$ deficiency is $\tfrac{6}{25}$.	By the assumed $\sqrt[\frac{1}{3}]{6}$ there is greater deficiency $\tfrac{330}{343}$.
By the assumed $\sqrt[\frac{1}{2}]{7}$ deficiency is $\tfrac{6}{25}$.	By the assumed $\sqrt[\frac{1}{3}]{7}$ there is greater deficiency $\tfrac{204}{343}$.

Agreeable to what was conjectured in the latter part of Par. 54,) and which was confirmed by the very great deficiencies in example 2d and 3d of Par. 44.)

64). It may be presumed the Arabians would be anxious to correct or diminish such important deficiencies as these. The method they have employed for this purpose in the Square is as follows:

The assumed Root of $a^2 + r$ by Par. 55), is $a + \frac{r}{2a+1}$ that is, $a + \frac{r \times 1}{2a \times 1 + 1}$. Instead of 1 here employed as the multiplier of r, and $2a$, let there be substituted the general real integer z, and this expression will become $a + \frac{rz}{2az+1}$ in which z may be taken any integer at pleasure. Then if this expression $a + \frac{rz}{2az+1}$ be assumed the approximate Square Root of $a^2 + r$, the deficiency in this case will evidently be $a^2 + r - \left(a + \frac{rz}{2az+1}\right)^2 = \frac{(2az+1)r - r^2z^2}{(2az+1)^2}$. Let any constant value be given to z and put this expression into Fluxions as in Par. 56), and then $2az\dot{r} + \dot{r} - 2z^2r\dot{r} = o$ and $\dot{r} = \frac{2az+1}{2z^2}$. Substitute this value of $\dot{r}$ and the expression $\frac{(2az+1)r - r^2z^2}{(2az+1)^2}$ becomes

$$\frac{(2az+1)\frac{2az+1}{2z^2} - z^2\frac{(2az+1)^2}{4z^4}}{(2az+1)^2} = \frac{1}{4z^2}$$

65). Now as $\frac{1}{4z^2}$ evidently becomes less, as z becomes greater, so it might at first be supposed that if z were taken very large, the error would be very inconsiderable. But then it must be observed that since z^2 increases faster than z, so if z be taken very great, the numerator $(2az+1)r - r^2z^2$ becomes negative, and since the denominator

$(2az+1)^2$ is positive so the fraction $\frac{(2az+1)r-r^2z^2}{(2az+1)^2}$ which expresses the deficiency will also be negative. Now a negative deficiency is an excess. That is by taking z too large, the assumed Root will be greater than the truth instead of less. In this case the positive fraction $\frac{1}{4z^2}$ is greater than o, and all the negative values of $\frac{(2az+1)r-r^2z^2}{(2az+1)^2}$, though they may be numbers of a greater denomination, yet as they are all less than o, so they are also all less than positive $\frac{1}{4z^2}$, which hence is still truly a maximum.

66). Now since this expression $\frac{(2az+1)r-r^2z^2}{(2az+1)^2}$ when negative is the amount of the negative deficiency produced by assuming $a+\frac{rz}{2az+1}$ as the true Square Root of a^2+r, so if this expression have its signs changed it will become $\frac{r^2z^2-(2az+1)r}{(2az+1)^2}$ and will be the positive excess produced by the same assumption.

For in this case since by supposition $\overline{a+\frac{rz}{2az+1}}\Big|^2 > a^2+r$, so instead of $(a^2+r)-\left(a+\frac{rz}{2az+1}\right)^2$ as in Par. 64) for a deficiency we have for an excess. $\left(a+\frac{rz}{2az+1}\right)^2-(a^2+r)=\frac{r^2z^2-(2az+1)r}{(2az+1)^2}$ as above.

67.) Now this expression increases in value both by the increase of r and of z.

For $\dfrac{r^2 z^2 - (2 a z + 1) r}{(2 a z + 1)^2} = \dfrac{r^2 z^2}{(2 a z + 1)^2} - \dfrac{r}{2 a z + 1}$. Then—

First. Since r^2 increases faster than r, so by increasing r the expression $\dfrac{r^2 z^2}{(2 a z + 1)^2}$ will increase faster than $\dfrac{r}{2 a z + 1}$ and hence their difference $\dfrac{r^2 z^2}{(2 a z + 1)^2} - \dfrac{r}{2 a z + 1}$ will increase also.

Second. Let ζ be another value of z greater than the present, and let $\dfrac{r^2 z^2}{(2 a z + 1)^2} = x$ and $\dfrac{r^2 \zeta^2}{(2 a \zeta + 1)^2} = \xi$. Then—

$$\frac{x (2 a z + 1)^2}{z^2} = r^2 = \frac{\xi (2 a \zeta + 1)^2}{\zeta^2} \text{ and hence } x = \frac{z^2 \xi (2 a \zeta + 1)^2}{\zeta^2 (2 a z + 1)^2}$$

$$= \xi \times \frac{4 a^2 \zeta^2 z^2 + 4 a \zeta z^2 + z^2}{4 a^2 \zeta^2 z^2 + 4 a \zeta^2 z + \zeta^2}$$

Then $4 a^2 \zeta^2 z^2 + 4 a \zeta z^2 + z^2 \angle 4 a^2 \zeta^2 z^2 + 4 a \zeta^2 z + \zeta^2$. For $4 a^2 \zeta^2 z^2 = 4 a^2 \zeta^2 z^2$, and since by supposition $z \angle \zeta$, so $4 a \zeta z^2$, or $4 a \zeta z \times z \angle 4 a \zeta^2 z \times \zeta$, or $4 a \zeta^2 z$, and for the same reason $z^2 \angle \zeta^2$.

Hence $x = \xi \times \dfrac{4 a^2 \zeta^2 z^2 + 4 a \zeta z^2 + z^2}{4 a^2 \zeta^2 z^2 + 4 a \zeta^2 z + \zeta^2}$ or ξ multiplied by a proper fraction. That is $x \angle \xi$, and consequently the expression $\dfrac{r^2 z^2}{(2 a z + 1)^2}$ increases by the increase of z. And again evidently $\dfrac{r}{2 a z + 1}$ which is the subtracted part of the expression, is diminished by the increase of z, that is, as r is divided by a greater number. Then since the increase of z

causes $\frac{r^2 z^2}{(2az+1)^2}$ to increase, and $\frac{r}{2az+1}$ to diminish, so it must evidently cause their difference $\frac{r^2 z^2}{(2az+1)^2} - \frac{r}{2az+1}$ to increase also.

Now r by Par. 55) is $\angle\ 2a+1$, that is, r is not greater than $2a$. Substitute this value of r and the expression $\frac{r^2 z^2}{(2az+1)^2} - \frac{r}{2az+1}$ becomes

$$\frac{4a^2 z^2}{4a^2 z^2 + 4az + 1} - \frac{2a}{2az+1}.$$

Now since $4a^2z^2 + 4az + 1 > 4a^2z^2$ so $\frac{4a^2 z^2}{4a^2 z^2 + 4az + 1} \angle \frac{4a^2 z^2}{4a^2 z^2}$ or 1. And evidently $\frac{4a^2 z^2}{4a^2 z^2 + 4az + 1} - \frac{2a}{2az+1} \angle \frac{4a^2 z^2}{4a^2 z^2 + 4az + 1}$, and consequently is, à fortiori, also $\angle\ 1$; and since it is also by supposition, positive and real, it must be a proper fraction. That is, though the error of excess committed by assuming $a + \frac{rz}{2az+1}$ as the true Root of $a^2 + r$ continually increases both as r and z are taken greater and greater, yet, although r be taken as great as possible, and though z be taken as great as we please, yet this error must always be less than unit, which is the limit to which it continually tends, but cannot pass.

68). This may be more directly, I will not say more satisfactorily, proved, in the method of modern Geometers, by considering Infinity as a positive Idea. In this case, since the expression $\frac{r^2 z^2}{(2az+1)^2} - \frac{r}{2az+1}$

is increased both by the increase of r and z, so evidently its maximum is produced when r and z are both maxima. Now by last paragraph, since r is not greater than $2a$, so $2a$ is maximum of r. And since z is any integer at pleasure, so Infinity is the maximum of z. Substitute these values of r and z, and this expression becomes $\frac{4a^2\infty^2}{4a^2\infty^2 + 4a\infty + 1}$ $\frac{2a}{2a\infty + 1}$. Now since $2a\infty + 1$ is infinitely great, so $\frac{2a}{2a\infty + 1}$ when a is finite, becomes infinitely small, and vanishes. And the quantity $4a\infty + 1$ being an infinite of the first order, vanishes before $4a^2\infty^2$ an infinite of the second order, and the expression is reduced to $\frac{4a^2\infty^2}{4a^2\infty^2} = 1$ as before. But it is to be considered whether it be correct Logic to ascribe positive properties to the negative idea Infinity.

69). By this it is evident not much advantage is gained, for by Par. 56) the error on one side may be $\frac{1}{4}$, and here it may be 1 on the other. To correct this, and to render the error of excess as small as possible, the Arabian Arithmeticians direct that z should not be taken greater than 2, and hence the assumed Root of $a^2 + r$ is $a + \frac{2r}{4a+1}$ and the error expressed by $\frac{(2az+1)r - r^2z^2}{(2az+1)^2}$ becomes $\frac{(4a+1)r - 4r^2}{(4a+1)^2}$. If in this case, the deficiency is positive, then by Par. 64), it cannot be greater than $\frac{1}{4z^2}$ or $\frac{1}{4 \cdot 2^2}$ or $\frac{1}{16}$. But if this expression is negative, it is evident that it can only become negative by the increase of r. Now as before maximum of r is $2a$. Substitute this value of r, and the expression

$\frac{(4a+1)r-4r^2}{(4a+1)^2}$ becomes $\frac{2a-8a^2}{16a^2+8a+1}$ and is the greatest denomination of the negative deficiency, and consequently as in Par. 66,) this expression with its signs changed, that is $\frac{8a^2-2a}{16a^2+8a+1}=\frac{8a^2}{(4a+1)^2}-\frac{2a}{(4a+1)^2}$ is the maximum of the positive error of excess.

70). Now this expression increases by the increase of a. For let α be any other value greater than the present, and let $\frac{8a^2}{(4a+1)^2}=p$, and $\frac{8\alpha^2}{(4\alpha+1)^2}=\pi$. And then by the very same reasoning that was employed in Par. 67) with z, ζ, x and ξ, it will be found that $p=\pi\times\frac{16\alpha^2a^2+8\alpha a^2+a^2}{16\alpha^2\alpha^2+8\alpha^2\alpha+\alpha^2}$ and that $16\alpha^2a^2+8\alpha a^2+a^2 \angle 16\alpha^2\alpha^2+8\alpha^2\alpha+\alpha^2$, and consequently that $p=\pi$ multiplied by a proper fraction, that is, $p \angle \pi$. And hence $\frac{8a^2}{(4a+1)^2}$ increases by the increase of a. Again $\frac{2a}{(4a+1)^2}=\frac{2a}{16a^2+8a+1}$, and since a^2 increases faster than a, so $16a^2+8a+1$ increases faster than $2a$. That is, $\frac{2a}{16a^2+8a+1}$ diminishes by the increase of a. And consequently by the same reasoning as in Par. 67,) the whole expression $\frac{8a^2}{(4a+1)^2}-\frac{2a}{(4a+1)^2}$ increases by the increase of a, and is by supposition positive and real. And by a continuation of the reasoning of the same paragraph, it will be seen that $\frac{8a^2}{(4a+1)^2}-\frac{2a}{(4a+1)^2} \angle \frac{8a^2}{(4a+1)^2}$ or

$\dfrac{8\,a^2}{16\,a^2 + 8\,a + 1}$ and consequently also $\angle\,\dfrac{8\,a^2}{16\,a^2}$ or $\frac{1}{2}$. That is to say, the error of excess committed by assuming $\dfrac{2\,r}{4\,a + 1}$ as the Square Root of $a^2 + r$ continually increases as a is greater and greater, but can never exceed the limit $\frac{1}{2}$. This is also proved by the same consideration of Infinity, as in Par. 68. For if a be infinitely great, then, in the expression $\dfrac{8\,a^2 - 2\,a}{16\,a^2 + 8\,a + 1}$, $2\,a$ vanishes before $8\,a^2$, and $8\,a + 1$ vanishes before $16\,a^2$, and hence it will be reduced to $\dfrac{8\,a^2}{16\,a^2} = \frac{1}{2}$ as before.

71). As an illustration of all this, let us resume the former 3 sets of examples of Par. 57,) and suppose $z = 2$, so that the assumed Root will be $a + \dfrac{2\,r}{4\,a + 1}$ and then—

1

Let A $= 2$ and assumed Root $= 1\frac{2}{5}$.

Then $\overline{1\frac{2}{5}}|^2 = 1 + \frac{4}{5} + \frac{4}{25} = 1\frac{24}{25}$ and deficiency $= \frac{1}{25}$.

Let A $= 3$ and assumed Root $= 1\frac{4}{5}$, and in this case $r = 2\,a$, and is a maximum.

Then $\overline{1\frac{4}{5}}|^2 = 1 + \frac{8}{5} + \frac{16}{25} = 3\frac{6}{25}$, and the excess is $\frac{6}{25}$.

2

Let A $= 5$ and assumed Root $= 2\frac{2}{9}$.

Then $\overline{2\frac{2}{9}}|^2 = 4 + \frac{8}{9} + \frac{4}{81} = 4\frac{76}{81}$ and deficiency $= \frac{5}{81}$.

Let A $= 6$ and assumed Root $= 2\frac{4}{9}$.

Then $\overline{2\frac{4}{9}}|^2 = 4 + \frac{16}{9} + \frac{16}{81} = 5\frac{79}{81}$ and deficiency $= \frac{2}{81}$.

Let A $= 7$ and assumed Root $= 2\frac{6}{9}$.

Then $\overline{2\frac{6}{9}}|^2 = 4 + \frac{24}{9} + \frac{36}{81} = 7\frac{9}{81}$ and deficiency $= \frac{1}{9}$.

Let A $= 8$ and assumed Root $= 2\frac{8}{9}$, and in this case $r = 2\,a$, and is a Maximum.

Then $\overline{2\frac{8}{9}}|^2 = 4 + \frac{32}{9} + \frac{64}{81} = 8\frac{28}{81}$ and excess $= \frac{28}{81}$.

3

Let A $= 10$ and assumed Root $= 3\frac{2}{13}$.

Then $\overline{3\frac{2}{13}}|^2 = 9 + \frac{12}{13} + \frac{4}{169} = 9\frac{160}{169}$ and deficiency $= \frac{9}{169}$.

Let A $= 11$ and assumed Root $= 3\frac{4}{13}$.

Then $\overline{3\frac{4}{13}}|^2 = 9 + \frac{24}{13} + \frac{16}{169} = 10\frac{159}{169}$ and deficiency $= \frac{10}{169}$.

Let A $= 12$ and assumed Root $= 3\frac{6}{13}$.

Then $\overline{3\frac{6}{13}}|^2 = 9 + \frac{36}{13} + \frac{36}{169} = 11\frac{166}{169}$ and deficiency $= \frac{3}{169}$.

Let A $= 13$ and assumed Root $= 3\frac{8}{13}$.

Then $\overline{3\frac{8}{13}}|^2 = 9 + \frac{48}{13} + \frac{64}{169} = 13\frac{12}{169}$ and excess $= \frac{12}{169}$.

Let A $= 14$ and assumed Root $= 3\frac{10}{13}$.

Then $\overline{3\frac{10}{13}}|^2 = 9 + \frac{60}{13} + \frac{100}{169} = 14\frac{35}{169}$ and excess $= \frac{35}{169}$.

Let A $= 15$ and assumed Root $= 3\frac{12}{13}$, and in this case $r = 2a$ and is a Maximum.

Then $\overline{3\frac{12}{13}}|^2 = 9 + \frac{72}{13} + \frac{144}{169} = 15\frac{66}{169}$ and excess $= \frac{66}{169}$.

And from these examples we may observe—

72). That each deficiency $\angle \frac{1}{16}$ according to Par. 69.)

73). That each excess $\angle \frac{1}{2}$ according to Par. 70, for even in the three cases where r is a Maximum, and consequently the excess should, by Par. 68 and 71), be greatest, the excess is

When $a = 1$, only $\frac{6}{25}$.

When $a = 2$, it is greater, and becomes $\frac{28}{81}$.

When $a = 3$, it is still greater, and becomes $\frac{66}{169}$.

And we may hence also observe, that the excess increases with the increase of a, as by Par. 70).

74). For more illustration, let z be taken $= 3$, and let other things remain the same, and then the assumed Root will be $a + \frac{3r}{6a+1}$ and the deficiency must be $\angle \frac{1}{4 \cdot 3^2}$ or $\frac{1}{36}$, as by Par. 64.) Then the same

three sets of examples will become as follow :

1

Let A = 2 and assumed Root = $1\frac{3}{7}$.

Then $\overline{1\frac{3}{7}}|^2 = 1 + \frac{6}{7} + \frac{9}{49} = 2\frac{2}{49}$ and excess = $\frac{2}{49}$.

Let A = 3 and assumed Root = $1\frac{6}{7}$ and r, a Maximum.

Then $\overline{1\frac{6}{7}}|^2 = 1 + \frac{12}{7} + \frac{36}{49} = 3\frac{22}{49}$ and excess = $\frac{22}{49}$.

2

Let A = 5 and assumed Root = $2\frac{3}{13}$.

Then $\overline{2\frac{3}{13}}|^2 = 4 + \frac{12}{13} + \frac{9}{169} = 4\frac{165}{169}$ and deficiency = $\frac{4}{169}$.

Let A = 6 and assumed Root = $2\frac{6}{13}$.

Then $\overline{2\frac{6}{13}}|^2 = 4 + \frac{24}{13} + \frac{36}{169} = 6\frac{10}{169}$ and excess = $\frac{10}{169}$.

Let A = 7 and assumed Root = $2\frac{9}{13}$.

Then $\overline{2\frac{9}{13}}|^2 = 4 + \frac{36}{13} + \frac{81}{169} = 7\frac{42}{169}$ and excess = $\frac{42}{169}$.

Let A = 8 and assumed Root = $2\frac{12}{13}$ and r, a Maximum.

Then $\overline{2\frac{12}{13}}|^2 = 4 + \frac{48}{13}$ and $\frac{144}{169} = 8\frac{92}{169}$ and excess $\frac{92}{169}$.

3

Let A = 10 and assumed Root = $3\frac{3}{19}$.

Then $\overline{3\frac{3}{19}}|^2 = 9 + \frac{18}{19} + \frac{9}{361} = 9\frac{351}{361}$ and deficiency $= \frac{10}{361}$.

Let A $= 11$ and assumed Root $= 3\frac{6}{19}$.

Then $\overline{3\frac{6}{19}}|^2 = 9 + \frac{36}{19} + \frac{36}{361} = 10\frac{359}{369}$ and deficiency $\frac{2}{361}$.

Let A $= 12$ and assumed Root $= 3\frac{9}{19}$.

Then $\overline{3\frac{9}{19}}|^2 = 9 + \frac{54}{19} + \frac{81}{361} = 12\frac{324}{361}$ and excess $= \frac{24}{361}$.

Let A $= 13$ and assumed Root $= 3\frac{12}{19}$.

Then $\overline{3\frac{12}{19}}|^2 = 9 + \frac{72}{19} + \frac{144}{361} = 13\frac{73}{361}$ and excess $= \frac{73}{361}$.

Let A $= 14$ and assumed Root $= 3\frac{15}{19}$.

Then $\overline{3\frac{15}{19}}|^2 = 9 + \frac{90}{19} + \frac{225}{361} = 14\frac{130}{361}$ and excess $= \frac{130}{361}$.

Let A $= 15$ and assumed Root $= 3\frac{18}{19}$ and r, a Maximum.

Then $\overline{3\frac{18}{19}}|^2 = 9 + \frac{108}{19} + \frac{324}{361} = 15\frac{210}{361}$ and excess $= \frac{210}{361}$.

And from these examples we may observe—

75). That each deficiency $\angle \frac{1}{36}$, as by Par. 75,) and each excess $\angle 1$, as by Par. 68,) and also that the deficiencies, though less in value, are yet fewer in number, and the excesses are both greater in number and value than in the examples of Par. 71.)

76). For still farther illustration, let us take $z =$ a great number $= 100$, and let us take the three examples in these sets wherein r is a

Maximum, and wherein consequently by Paras. 67 and 68,) the excess should be as great as possible. Then the assumed Root will be $a + \frac{100\,r}{200\,a + 1}$ $= a + \frac{100 \times 2\,a}{200\,a + 1} = a + \frac{200\,a}{200\,a + 1}$, and then

Let A $= 3$ and assumed Root $= 1\frac{200}{201}$.

Then $\overline{1\frac{200}{201}}|^2 = 1 + \frac{400}{201} + \frac{40000}{40401} = 3\frac{39598}{40401}$.

Let A $= 8$ and assumed Root $= 2\frac{400}{401}$.

Then $\overline{2\frac{400}{401}}|^2 = 4 + \frac{1600}{401} + \frac{160000}{160801} = 8\frac{158396}{160801}$.

Let A $= 15$ and assumed Root $= 3\frac{600}{601}$.

Then $\overline{3\frac{600}{601}}|^2 = 9 + \frac{3600}{601} + \frac{360000}{361201} = 15\frac{356394}{361201}$.

In which it will easily be observed, that the excesses, though large, are yet still $\angle$ 1, and that they increase with the increase of a.

77). These speculations might easily be continued and diversified, and pursued into higher powers; but this, like all other Mathematical subjects, leads to interminable results, and as an abrupt conclusion must be made somewhere, so it is high time, considering the length of this Paper, that it should be made here. Some apology is, perhaps, necessary for the great length to which the Essay has already extended, and which is, indeed, much greater than I had supposed would have been necessary; but it is not very easy to abridge such a detail without rendering it

obscure; and I therefore hope the nature of the subject, which is both curious in itself, and affords a complete estimate of the state of Arithmetic among the Arabians, will be a sufficient justification of my prolixity.

78). I must conclude this Essay as my former, with an acknowledgement of my obligations to my very intelligent friend Dewan Kanh Jee, of Patna; by him I was furnished with the extract of the Ayoun-ul-Hisab. His Treatise of Arithmetic formerly mentioned,* and his oral explanation, enabled me to comprehend the obscure and studied brevity of the Arabian Author; and from the same sources I derived those observations on the fractional part of the Root which form the basis of the concluding paragraphs of the present Essay.

* See Essay on the Binomial Theorem, Vol. XIII. of the Researches, p. 466.

III.

SKETCH

OF THE

RELIGIOUS SECTS OF THE HINDUS,

By HORACE HAYMAN WILSON, Esq.

Secretary Asiatic Society.

SAIVAS.

In the former communication on this subject, which I had the honour to lay before the Society, I attempted to convey a notion of the different classes amongst which the numerous worshippers of Vishnu are distributed. In my present, I propose to compleat my task, and commencing with the followers of Siva and of Sakti, conclude with those sects which are of a miscellaneous and less orthodox description.

The worship of Siva in the districts along the Ganges, presents itself under a very different aspect from that of Vishnu, and with some singular anomalies. It appears to be the most prevalent and popular of all the modes of adoration, to judge by the number of shrines dedicated to the only form under which Siva is reverenced, that of the *Linga;* yet

it will be generally observed, that these temples are scarcely ever the resort of numerous votaries, and that they are regarded with comparatively little veneration by the Hindus. *Benares*, indeed, furnishes exceptions, and the temple of *Visweswara** is thronged with a never-ceasing crowd of adorers. There is, however, little solemnity or veneration in the hurried manner in which they throw their flowers or fruits before the image;† and there are other temples, the dwellings of other divinities, that rival the abode of *Visweswara* in popular attraction.

The adoration of SIVA, indeed, has never assumed, in Upper India, a popular form. He appears in his shrines only in an unattractive and rude emblem, the mystic purpose of which is little understood, or regarded by the uninitiated and vulgar, and which offers nothing to interest the feelings or excite the imagination. No legends are recorded of this deity of a poetic and pleasing character; and above all, such legends as are narrated in the Puranas and Tantras, have not been presented to the

---

* "The Lord of all," an epithet of SIVA, represented as usual by a *Linga*. It is one of the twelve principal emblems of this description, and has been, for many centuries, the chief object of veneration at *Kási* or *Benares*. The old temple was partially destroyed by the Mohammedans in the reign of AURENGZEB: the present was built by AHALYA BAI, the Mahratta Princess, and although small and without pretension to magnificence, is remarkable for the minute beauty of its architectural embellishments.

† A Hindu temple comprises an outer court, usually a quadrangle, sometimes surrounded by a piazza; and a central edifice constituting the shrine. This, which in Upper India is generally of small dimensions, is divided into two parts, the *Sabhá*, or vestibule; and the *Garbhagriha*, or adytum, in which the Image is placed. The course of worship is the circumambulating of the temple, keeping the right hand to it, as often as the devotee pleases: the worshipper then enters the vestibule, and if a bell is suspended there, as is commonly the case, strikes two or three times upon it. He then advances to the threshhold of the shrine, presents his offering, which the officiating Brahman receives, mutters inaudibly a short prayer, accompanied with prostration, or simply with the act of lifting the hands to the forehead, and departs. There is nothing like a religious service, and the rapid manner in which the whole is performed, the quick succession of worshippers, the gloomy aspect of the shrine, and the scattering about of water, oil, and faded flowers, inspire any thing but feelings of reverence or devotion.

Hindus in any accessible shape. The *Saivas* have no works in any of the common dialects, like the *Rámáyana*, the *Bárttá*, or the *Bhaktamálá*. Indeed, as far as any enquiry has yet been instituted, no work whatever exists, in any vernacular dialect, in which the actions of SIVA, in any of his forms, are celebrated. It must be kept in mind, however, that these observations are intended to apply only to Gangetic Hindustan, for in the South of India, as we shall hereafter see, popular legends relating to local manifestations of SIVA, are not uncommon.

Corresponding to the absence of multiplied forms of this divinity, as objects of worship, and to the want of those works which attach importance to particular manifestations of the favourite god, the people can scarcely be said to be divided into different sects, any farther than as they may have certain religious mendicants for their spiritual guides. Actual divisions of the worshippers of SIVA are almost restricted to these religious personages, collected sometimes, in opulent and numerous associations; but for the greater part detached, few, and indigent. There are no establishments amongst the *Saivas* of Hindustan, like those of *Srináth* or *Puri;* no individuals as wealthy as the *Gokulastha Gosains*, nor even as influential as the descendants of ADWAITA and NITYÁNAND. There are no teachers of ancient repute except SANKARA ACHÁRYA, and his doctrines are too philosophical and speculative to have made him popular.

The worship of SIVA continues, in fact, to be what it appears to have been from a remote period, the religion of the *Brahmanas*.* SAMBHU is declared, by MENU, to be the presiding deity of the Brahmanical order, and the greater number of them, particularly those who practice the rites of the *Vedas*, or who profess the study of the *Sástras*, receive SIVA as

* See a preceding Note—A. R. vol. XVI. page 2.

their tutelary deity, wear his insignia, and worship the *Linga*, either in temples, in their houses, or on the side of a sacred stream, providing, in the latter case, extempore emblems kneaded out of the mud or clay of the river's bed. The example of the Brahmans, and the practice of ages, maintain the veneration universally offered to the type of SIVA; but it is not the prevailing, nor the popular condition of the Hindu faith, along the banks of the Ganges. We shall now proceed to specify the different classes into which the worshippers of SIVA, as distinct from the mass of Brahmans, may be distinguished.

DAŃDIS AND DASNÁMIS.

It is customary to consider these two orders as forming but one division. The classification is not, in every instance, correct, but the practices of the two are, in many instances, blended, and both denominations are accurately applicable to the same individual. It will not be necessary, therefore, to deviate from the ordinary enumeration.

The *Dańdis*, properly so called, and the *Tridańdis* of the *Vaishnavas*, are the only legitimate representatives of the fourth *Asrama*, or mendicant life, into which the Hindu, according to the instructions of his inspired legislators, is to enter, after passing through the previous stages of student, householder and hermit.* It is not necessary, however, to have gone through the whole of the previous career, as the Brahman may pass from

---

* Thus MENU, 6, 33.

वनेषु तु विहृत्यैवन्तृतीयम्भागमायुषः।
चतुर्थमायुषो भागंत्यक्त्वा सङ्गान् परिव्रजेत्॥

"Having thus performed religious acts in a forest during the third portion of his life, let him become a *Sanyási*, for the fourth portion of it, abandoning all sensual affection.

any one of the first orders to the last at once;* he is then to take up his staff and water pot, to derive from begging such a portion of food as is sufficient for his mere sustenance, and to devote the remainder of his day to holy study and pious meditation.†

Adopting, as a general guide, the rules of original works, the *Dańḍí* is distinguished by carrying a small *Dańḍ*, or wand, with several processes or projections from it, and a piece of cloth dyed with red ochre, in which the Brahmanical cord is supposed to be enshrined, attached to it: he shaves his hair and beard, wears only a cloth round his loins, and subsists upon food obtained ready-dressed from the houses of the Brahmanas.

---

* So MENU, as expounded by KULLUKA BHATTA, 6, 38.

प्राजापत्यां निरूप्येष्टिं सर्व्ववेदसदक्षिणाम्
आत्मन्यग्नीन् समारोप्य ब्राह्मणः प्रव्रजेद्गृहात् ॥
ब्रह्मचर्य्यादेव प्रव्रजेत् गृहाद्वा वनाद्वा इति टीका ।

"Having performed the sacrifice of *Prájápati*, &c. a Brahman may proceed from his house, that is, from the second order, or he may proceed even from the first to the condition of a *Sanyási*." Indeed the intermediate stage of the *Vanaprastha* is amongst the prohibited acts in the *Kali* age.

† Agreeably to the high authority already quoted, 6, 41, &c.

आगारादभिनिष्क्रान्तः पवित्रोपचितो मुनिः
समुपोढेषु कामेषु निरपेक्षः परिव्रजेत् ॥
अनग्निरनिकेतः स्याद्ग्राममन्नार्थमाश्रयेत्
उपेक्षकोऽशङ्कुसुको मुनिर्भावसमाहितः ।

"Departing from his house, taking with him pure implements, his water-pot, and staff, keeping silence, unallured by desire of objects near him, let him enter into the fourth order."

"Let him have no culinary fire, no domicile, let him when very hungry, go to the town for food, let him patiently bear disease, let him study to know God, and fix his attention on God alone.

once a day only, which he deposits in the small clay pot that he carries always with him: he should live alone, and near to, but not within a city; but this rule is rarely observed, and in general the *Dańdís* are found in cities collected like other mendicants in *Maths*.* The *Dańdí* has no particular time or mode of worship, but spends his time in meditation, or in practices corresponding with those of the *Yoga*, and in the study of the *Vedánta* works, especially according to the comments of SANKARÁCHÁRYA. As that teacher was an incarnation of SIVA,† the *Dańdís* reverence that

---

* These are all founded on the following texts of MENU.

कृतकेशनखश्मश्रुः पात्रोदण्डी कुसुम्भवान्
विचरेन्नियतोनित्यं सर्व्वभूतान्यपीडयन्॥
एककालचरेद्भैक्षं न प्रसज्जेत विस्तरे।
भैक्षे प्रसक्तो हि यतिर्विषयेष्वपि सज्जति।
विधूमे सन्नमुसले व्यङ्गारे भुक्तवज्जने
वृत्ते शरावसम्पाते भिक्षान्नित्यं यतिश्चरेत्॥
अलाभे न विषादी स्याल्लाभे चैव न हर्षयेत्
मात्रासिकमात्रः स्यान्मात्रासङ्गादिनिर्गतः॥

"His hair, nails and beard being clipped, bearing with him a dish, a staff, and a water-pot, let him wander about continually without giving pain to any being." 52.

"Only once a day let him demand food, let him not habituate himself to eat much at a time, for an anchorite habituated to eat much, becomes inclined to sensual gratification. 55.

"At the time when the smoke of kitchen fires has ceased, when the pestle lies motionless, when the burning charcoal is extinguished, when people have eaten and when dishes are removed, that is, late in the day, let the *Sanyási* always beg food.

"For missing it let him not be sorrowful, nor for gaining it, let him be glad, let him care only for a sufficiency to support life, but let him not be anxious about his utensils. 57, MENU 6.

† This character is given to him in the *Sankara Vijaya* of MÁDHAVA ACHÁRYA; his followers in the *Dekhin* assert that SIVA's descent as SANKARA, was foretold in the *Skanda Purána*: a prophecy which, if found in that work, will assist to fix its date, but the passage has not been met with.

deity and his incarnations, in preference to the other members of the Triad, whence they are included amongst his votaries; and they so far admit the distinction as not unfrequently to bear the *Saiva* mark upon the forehead, smearing it with the *Tripundra*, a triple transverse line made with the *Vibhùti*, or ashes which should be taken from the fire of an *Agnihotra Brahman*, or they may be the ashes of burnt cowdung from an oblation offered to the god*. They also adopt the initiating *Mantra* of all the *Saiva* classes, either the five or six syllable Mantra, "*Nama Siváya*," or, "*Om, Nama Siváya.*" The genuine *Dañdí*, however, is not necessarily of the *Saiva* or any other sect; and in their establishments it

---

* The material, or *Vibhúti*, and the efficacy of the mark, the *Tripundra*, are thus described in the *Kâsikhanda*—

आग्नेयमुच्यते भस्मदग्ध गोमयसम्भवं
तदेव द्रव्यमित्युक्तं त्रिपुण्ड्रस्य महामुने ॥

The ashes of fire made with burnt cowdung, are the material fittest for the *Tripundra.*

त्रिपुण्ड्रं कुरुते यस्तु भस्मना विधिपूर्वकम् ।
महापातकसङ्घातैर्मुच्यते त्रोपपातकैः
अमन्त्रेणापि यः कुर्य्यादज्ञात्वा महिमोन्नतिं
त्रिपुण्ड्रं भालफलके मुच्यते सर्व्वपातकैः ।

Whoever marks the *Tripundra* with ashes, agreeably to rule, is purified from sins of the first and second degree: who makes it on his forehead without the *Mantras*, being ignorant of its virtue, will be purified from every simple sin. The mode of making it is thus laid down:

भ्रुवोर्मध्ये समारभ्य यावदन्तो भवेद्भ्रुवोः ।
मध्यमानामिकाङ्गुल्योर्मध्येतु प्रतिलोमतः ॥
अंगुष्ठेन कृता रेखा त्रिपुण्ड्राख्योभिधीयते ।

Beginning between the eye-brows, and carrying it to their extremity, the mark made with the thumb reverted between the middle and third fingers, is called the *Tripundra.*

will be usually found that they profess to adore *Nirguna* or *Niranjana*, the deity devoid of attribute or passion*.

The *Dańdis*, who are rather practical than speculative, and who have little pretence to the appellation beyond the epithet and outward signs of the order, are those most correctly included amongst the *Saiva* sects. Amongst these, the worship of SIVA, as BHAIRAVA, is the prevailing form, and in that case part of the ceremony of initiation consists in inflicting a small incision on the inner part of the knee, and drawing the blood of the novice as an acceptable offering to the god. The *Dańdis* of every description, have also a peculiar mode of disposing of their dead, putting them into coffins and burying them; or when practicable, committing them to some sacred stream. The reason of this is their being prohibited the use of fire on any account†.

Any Hindu of the three first classes may become *Sanyási* or *Dańdi*, or, in these degenerate days, a Hindu of any caste may adopt the life and emblems of this order. Such are sometimes met with, as also are Brahmans, who, without connecting themselves with any community,

---

* The *Dańdis* of the North of India are the *Sanyásis*, or monastic portion of the *Smartal Brahmanas* of the South, of whom BUCHANAN gives the following account: "The most numerous class here, and which comprehends about one-half of all the Brahmans in the Lower Carnatic, is called the *Smartal* Sect, and its members are the followers of SANKARA ACHÁRYA. They are commonly said to be of the sect of SIVA, but they consider BRAHMA, VISHNU and ISWARA to be the same as the creator, preserver, and destroyer of the universe. They are readily distinguished by three horizontal stripes on the forehead, made with the ashes of cowdung." (Buch. 1. 13). "The *Sanyásis* are the *Gurus* of this sect;" (Ibid 305) and the *Dańdis* have great influence and authority amongst *Saiva* Brahmans of the North of India.

† In the South, the ascetic followers of both SIVA and VISHNU bury the dead; (Dubois, 56) so do the *Vaishnava Vairágis* and *Sanyásis* in the North of India, and the *Saiva Jogis*. The class of Hindu weavers called *Yogis*, have adopted a similar practice; (Ward 1, 201) all the casts in the South, that wear the *Linga*, do the same, (Buch. 1. 27).

assume the character of this class of mendicants. These constitute the *Dandís* simply so termed, and are regarded as distinct from the primitive members of the order, to whom the appellation of *Dasnámis* is also applied, and who admit none but Brahmans into their fraternity.

The *Dasnámi Dandís*, who are regarded as the descendants of the original members of the fraternity, are said to refer their origin to SANKARA ACHÁRYA, an individual who appears to have performed a part of some importance in the religious history of Hindustan; and to whom an influence has been often attributed much exceeding that which he really exercised. His biography, like that of most of the Hindu saints, is involved in considerable obscurity; but a few facts may be gleaned from such accounts as we have of him, upon which reliance may be placed, and to which it may not be uninteresting here briefly to advert.

A number of works are current in the South of India relating to this teacher, under the titles of *Sankara Cheritra*, *Sankara Kathá*, *Sankara Vijaya*, or *Sankara Digvijaya*, following much the same course of narration, and detailing little more than SANKARA's controversial victories over various sects; in most cases, no doubt, the fictions of the writers. Of the two principal works of the class, one attributed to ANANDAGIRI, a pupil of *Sankara*, has already been noticed.* The other is the work of MÁDHAVA ACHÁRYA, the minister of some of the earliest chiefs of *Vijayanagar*, and who dates, accordingly, in the fourteenth century. This is a composition of high literary and polemical pretension, but not equally high biographical value. Some particulars of SANKARA's birth and early life are to be found in the *Kerala Utpatti*, or political and statistical description of *Malabar*,

* See Asiatick Researches, vol. XVI. page 10.

although the work is sometimes said to have been composed by SANKARA himself.

With regard to the place of SANKARA's birth, and the tribe of which he was a member, most accounts agree to make him a native of *Kerala*, or *Malabar*, of the tribe of *Namburi* Brahmans, and in the mythological language of the sect, an incarnation of SIVA. According to other traditions, he was born at *Chidambaram*, although he transferred his residence to *Malabar*, whilst the *Kerala Utpatti* recognises *Malabar* as his native place, and calls him the offspring of adultery, for which his mother SRI MAHÂDEVI was expelled her caste.

In *Malabar*, he is said to have divided the four original castes into seventy-two, or eighteen sub-divisions each, and to have assigned them their respective rites and duties. Notwithstanding this, he seems to have met with particular disrespect, either on account of his opinions, origin, or his wandering life. On his return home, on one occasion, his mother died, and he had to perform the funeral rites, for which his relations refused to supply him with fire, and at which all the Brahmans declined to assist. SANKARA then produced fire from his arm, and burnt the corpse in the court yard of the house, denouncing imprecations on the country to the effect, that the Brahmans there should not study the Vedas, that religious mendicants should never obtain alms, and that the dead should always be burned close to the houses in which they had resided—a custom which is said to have survived him.

All accounts concur in representing SANKARA as leading an erratic life, and engaging in successful controversy with various sects, whether of the *Saiva*, *Vaishnava*, or less orthodox persuasions. In the course of his peregrinations, he established several *Maths*, or convents, under the presi-

dence of his disciples, particularly one still flourishing at *Sringeri*, or *Sringagiri*, on the western Ghats, near the sources of the *Tungabhadrá*. Towards the close of his life, he repaired as far as to *Kashmir*, and seated himself, after triumphing over various opponents, on the throne of SARASWATI. He next went to *Badarikásrama*, and finally to *Kedarnáth*, in the *Himálaya*, where he died at the early age of thirty-two. The events of his last days are confirmed by local traditions, and the *Pitha*, or throne of SARASWATI, on which SANKARA sat, is still shown in *Kashmir;* whilst at the temple of SIVA, at *Badari*, a Malabar Brahman, of the *Namburi* tribe, has always been the officiating priest.*

The influence exercised by SANKARA in person, has been perpetuated by his writings, the most eminent of which are his *Bháshyas*, or Commentaries on the *Sútras*, or Aphorisms of VYÂSA. A Commentary on the *Bhagavad Gita*, is also ascribed to him, as is one on the *Nrisinha Tapaníya Upanishad:* a cento of verses in praise of DURGA, the *Saundaryá Laharí*, is likewise said to be his composition, as sometimes is the *Amru Sataka*, a collection of amatory Stanzas, written in the name of AMRU, a Prince, whose dead body SANKARA is fabled to have animated, that by becoming familiarised with sensual enjoyments, he might argue upon such topics with the wife of *Madana Misra*, who was more than equal to him in discussions of this nature, and was the only disputant he was unable to subdue, until the period of his transmigration had expired, and he had thence become practised in the gratification of the passions.

Although no doubt of SANKARA's existence, or of the important part performed by him in the partial re-modelling of the Hindu system, can be entertained, yet the exact period at which he flourished can by no

* Asiatick Researches, vol. XII. page 536.

means be determined. I have, in another place, expressed my belief that he may have existed about the eighth or ninth century.* Subsequent enquiry has failed to add any reasons to those assigned for such an inference; but it has offered nothing to weaken or invalidate the conclusion there proposed.†

---

* Preface to the Sanscrit Dictionary, page XVII.

† A *Hálakánara* Manuscript, in the possession of the late Col. MACKENZIE, entitled *Sankara Vijaya*, (Mackenzie Collection 11, 34) gives the following list of the spiritual heads of the *Sringeri* establishment:

1. Govinda Páda.
2. Sankara Achárya.
3. Sanandana Achárya.
4. Surásura Achárya.
5. Trotaka Achárya.
6. Hastámalaka Achárya.
7. Jnyánaghana Achárya.
8. Jnyánottama Achárya.
9. Sinhagiríswara Achárya.
10. Iswaratírtha Achárya.
11. Nrisinha Múrtti Achárya.
12. Vitarana Achárya.
13. Vidyásankara Achárya.
14. Bháratí Krishna Achárya.
15. Vidyásanya Achárya.
16. Chandra Sekhara Achárya.
17. Nrisinha Bháratí Achárya.
18. Sankara Bharatí Achárya.
19. Nrisinha Bháratí Achárya.
20. Purushottoma Bháratí Achárya.
21. Ramachandra Bháratí Achárya.
22. Nrisinha Bháratí Achárya.
23. Immadi Bháratí Achárya.
24. Abhinava Nrisinha Bháratí Achárya.
25. Sachchidánanda Bháratí Achárya.
26. Nrisinha Bháratí Achárya.
27. Immádi Sachchidananda Bháratí Achárya.
28. Abhinava Sachchidánanda Bháratía Achárya.
29. Nrisinha Bháratí Achárya.

This gives 27 descents from SANKARA. As the *Mahant* is elected from the disciples, either by the *Guru* when about to die, or by the *Swámalu*, the spiritual chiefs of other establishments of the same sect, he is raised probably to the station in the prime of manhood, and in the ease and dignity of his sanctity has a favourable prospect of a long life. Twenty-five years to a *Guru* may therefore be but a fair average allowance, and the above list comprises at that rate an interval of 657 years: at what period it closes does not appear; but the *Hálakánara* language is obsolete, and the work is possibly not less than two or three centuries old. This series of *Gurus* is so far corroborative of the view elsewhere taken of SANKARA's date; but as it has been extracted by a Pandit, from a work which I could not consult myself, it is by no means certain that it is correct, and I do not wish to attach any undue importance to the authority.

The spiritual descendants of SANKARA, in the first degree, are variously named by different authorities, but usually agree in the number. He is said to have had four principal disciples, who, in the popular traditions, are called *Padmapáda*, *Hastámalaka*, *Sureswara* or *Mandana*, and *Trotaka*. Of these, the first had two pupils, *Tírtha* and *Asrama;* the second, *Vana* and *Aranya;* the third had three, *Saraswatí*, *Purí*, and *Bhárati;* and the fourth had also three, *Giri* or *Gir*, *Párvata*, and *Ságara*. These, which being all significant terms, were no doubt adopted names, constitute collectively the appellation *Dasnámi*, or the *ten named*, and when a Brahman enters into either class, he attaches to his own denomination that of the class of which he becomes a member; as *Tírtha*, *Purí*, *Gír*, &c.* The greater proportion of the ten classes of mendicants, thus descended from SANKARA ACHÁRYA, have failed to retain their purity of character, and are only known by their epithets as members of the original order. There are but three, and part of a fourth mendicant class, or those called *Tírtha* or *Indra*, *Asrama*, *Saraswatí*, and *Bhárati*, who are still regarded as really SANKARÁ's *Dańdis*. These are sufficiently numerous, especially in and about Benares. They comprehend a variety of characters; but amongst the most respectable of them, are to be found very able expounders of the *Vedánta* works. Other branches of Sanscrit literature owe important

---

* It is scarcely worth while perhaps to translate words of such common occurrence, but to prove what I have stated in the text, I subjoin their signification: *Tírtha*, a place of pilgrimage; *Asrama*, an order, as that of student, householder, &c.; *Vana*, a wood; *Aranya*, a wood; *Saraswáti*, the goddess of speech and eloquence; *Purí*, a city; *Bhárati*, speech, or its goddess; *Giri*, a mountain; in common use it always occurs *Gir*, which implies speech; *Párvata*, a mountaineer; *Ságara*, an ocean; the names are always compounded with different terms. One of SANKARÁ's disciples we have seen, called ANANDA GIRI. The famous MÁDHAVA, when he became a *Dańdi*, adopted the appellation of VÍDYÁRANYA. PÚRANGIR, has been elsewhere adverted to, and other like names occur in some of the following notes. *Bhárati* is the prevailing title of the latter *Sringagiri Gurus*.

obligations to this religious sect.* The most sturdy beggars are also members of this order, although their contributions are levied particularly upon the Brahmanical class, as whenever a feast is given to the Brahmanas, the *Dañdis* of this description present themselves unbidden guests, and can only be got rid of by bestowing on them a due share of the cates provided for their more worldly-minded brethren. Many of them practice the *Yoga*, and profess to work miracles, although with less success than some members of the order in the days of the author of the *Dábistán*, who specifies one *Dandadhári*, as able to suspend his breath for three hours, bring milk from his veins, cut bones with hair, and put eggs into a narrow mouthed bottle without breaking them.

The remaining six and a half members of the *Dasnámi* class, although considered as having fallen from the purity of practice necessary to the *Dañdí*, are still, in general, religious characters, and are usually denominated *Atíts*:† the chief points of difference between them and the preceding, are their abandonment of the staff, their use of clothes, money, and ornaments; their preparing their own food, and their admission of members from any order of Hindus. They are often collected in *Maths*, as well as the *Dañdis*, but they mix freely in the business of the world; they carry on trade, and often accumulate property, and they frequently officiate as priests at the shrines of some of the deities:‡ some of them even

---

* SANKARÁ and MÁDHAVA are well known by their numerous and excellent works. The chief Vedanta writers, in like manner, were *Dañdis*; and the author of the *Dasakumára*, RÁMASRAMA the Commentator on AMERA, and VIJNYÁNESWARA, the Commentator on the texts of YAJNAVALKYA, were of the same class of ascetics.

† From अतिथि *Atitai*, a guest, a temporary dweller upon earth; or अतीत *Atíta*, past away, liberated from worldly cares and feelings.

‡ The officiating priests at the celebrated shrine of ANNAPÚRNA, in Benares, are *Atíts*.

marry, but in that case they are distinguished by the term *Samyogí*, from the other *Atíts*.

The chief practices and designations of the *Dańdís*, as generally characteristic of them, have been already adverted to, but a great variety prevails in the details.* Their philosophical tenets in the main, are those of the *Vedánta* system, as taught by SANKARÁ and his disciples; but they generally superadd the practice of the *Yoga*, as taught by the followers of PATANJALI, and many of them have latterly adopted the doctrines of the *Tantras*. Besides SANKARÁ, the different orders of *Dańdís* hold in high veneration the MUNI DATTATREYA, the son of ATRI, and ANASUYÁ. By virtue of a boon bestowed upon ATRI, or according to one legend, on his wife, by the three deities BRAHMÁ, VISHNU, and SIVA, that sage had three sons, SOMA, DATTA, and DURVÁSAS, who were severally portions of the deities themselves.† DATTA, or DATTÁTREYA, was eminent for his practice of the *Yoga*, and hence is held in high estimation by the *Jogis*, of whom we are next to speak, whilst, as an incarnation of a portion of VISHNU, he is likewise venerated by the *Vaishnavas*.

YOGIS OR JOGIS.

The *Dańdís* are to the *Saiva* sects, what the followers of RÁMÁNUJA are to those of the *Vaishnava* faith, and a like parallel may be drawn between the disciples of RÁMÁNAND and those of GORAKHNÁTH, or the *Kánphata Jogis*, the first pair being properly restricted to the Brahmanical

* A specimen of the independent but scarcely orthodox *Dańdi*, is presented in the well known personage *Puran Gir*, of whom Mr. DUNCAN published an account in the 5th volume of the Asiatic Researches.

† *Bhágavat*, Book IV, and *Márkandeya Purâna*, Chapter XVI.

order, intended chiefly for men of learning; the two latter admitting members from every description of people, and possessing a more attractive popular character.

The term *Jogi* or *Yogi* is properly applicable to the followers of the *Yoga*, or *Pátanjala* school of philosophy, which, amongst other tenets, maintained the practicability of acquiring, even in life, entire command over elementary matter, by means of certain ascetic practices. The details of these it is unnecessary to particularize, and accounts of them and of the *Yoga* philosophy, will be best derived from the translation of BHOJA DEVÁS' Comment on the *Pátanjala Sútras*, in WARD's Account of the Hindus, and Mr. COLEBROOKE's Essay on the *Sánkkya* and *Pátanjala* doctrines, in the 1st volume of the Transactions of the Royal Asiatic Society. It is sufficient here to observe, that the practices consist chiefly of long continued suppressions of respiration; of inhaling and exhaling the breath in a particular manner; of sitting in eighty-four different attitudes; of fixing the eyes on the top of the nose, and endeavouring, by the force of mental abstraction, to effect a union between the portion of vital spirit residing in the body and that which pervades all nature, and is identical with SIVA, considered as the supreme being, and source and essence of all creation. When this mystic union is effected, the *Yogi* is liberated in his living body, from the clog of material incumbrance, and acquires an entire command over all worldly substance. He can make himself lighter than the lightest substances, heavier than the heaviest; can become as vast, or as minute as he pleases, can traverse all space, can animate any dead body, by transferring his spirit into it from his own frame, can render himself invisible, can attain all objects, becomes equally acquainted with the past, present, and future, and is finally united with SIVA, and consequently exempted from being born again upon earth. These super-human faculties are acquired, in various degrees, according to the

greater or less perfection with which the initiatory processes have been performed.

According to standard authorities, the perfect fulfilment of the rites which the *Yogi* has to accomplish, requires a protracted existence and repeated births, and it is declared to be unattainable in the present or *Kali* age.* The attempt is therefore prohibited, and the *Yoga* is prescribed in modern times. This inhibition is, however, disregarded, and the individuals who are the subjects of our enquiry, endeavour to attain the super-human powers which the performance of the *Yoga* is supposed to confer. They especially practice the various gesticulations and postures of which it consists, and labour assiduously to suppress their breath and fix their thoughts until the effect does somewhat realise expectation, and the brain, in a state of over-wrought excitement, bodies forth a host of crude and wild conceptions, and gives to airy nothings a local habitation and a name.† A year's intense application is imagined enough to qualify the

---

* The *Kásíkhanda* thus enumerates the difficulty or impossibility of completing the *Yoga* in the present age.

चञ्चलेन्द्रिय वृत्तित्वात्कलिजल्पमजृम्भणात्।
अल्पायुष्यात्तथानणां क्वेह योगमहोदयः ॥

"From the unsteadiness of the senses, the prevalence of sin in the *Kali*, and the shortness of life, how can Exaltation by the *Yoga* be obtained."

Again—

न सिध्यति कलौ योगो न सिध्यति कलौ तपः।

In the *Kali* age, the *Yoga* and severe penance are impracticable.

† Some who have commenced their career in this line, have carried the practice to several hours duration, at which time they have described themselves as becoming perfectly exhausted, with strange objects passing before them, and sparks of fire flashing in their eyes. One individual

adept,* whilst inferior faculties may be obtained by even a six month's practice.

There are few *Jogis*, however, who lay claim to perfection, and their pretensions are usually confined to a partial command over their physical and mental faculties. These are evinced in the performance of low mummeries, or juggling tricks, which cheat the vulgar into a belief of their powers. A common mode of display is by waving a *Chowri*, or bunch of peacock's feathers, over a sick or new-born infant, to cure it of any morbid affection, or guard it against the evil eye. A trick of loftier pretence has, of late, attracted some notice in the person of a Brahman at Madras, who, by some ingenious contrivance, appeared to sit in the air, and who boasted of being able to remain for a considerable period under water. He and his followers ascribed the possession of these faculties to his successful practice of the observances of the *Yoga*.†

---

quitted it from having at last a figure resembling himself always before him, and knowing this to be a deception, he wisely inferred the similar character of any other visionary creature of his contemplation and the absurdity of the practice. DUBOIS has some amusing anecdotes on this subject, (page 357, &c.) they are fully authenticated by the similar accounts which many *Vairágis*, in Upper India, will readily furnish. The worthy ABBE may indeed be generally trusted when he confines himself to what he saw or knew: in much that he heard he was misled, and in almost every thing connected with the language and literature, and the religion or philosophy, as taught by classical authority, he commits egregious blunders.

* ब्रह्मचारी मिताहारी योगी योगपरायणः ।
अब्दादूर्द्धं भवेत्सिद्धो नात्र कार्य्या विचारणा ॥

Leading a life of chastity and abstemiousness, and diligent in the practice of the *Yoga*, the *Yogi* becomes perfect after a year: of this there is do doubt. *Hatha Pradípa.*

† "*Sitting in the Air.*—An exhibition at Madras has excited considerable curiosity. A Brahmin, old and slightly made, represented to be of high caste, contrives to poise himself in a most extraordinary manner in the air. He performs this feat at any gentleman's house, not for money, but as an act of courtesy. The following is a description, from an eye-witness, given in a Calcutta

In referring to the origin of this system, we must, no doubt, go back to some antiquity, although the want of chronological data renders it impossible to specify the era at which it was first promulgated. That it was familiarly known and practised in the eighth century, we may learn from the plays of BHAVABHÚTI, particularly the *Málatí* and *Mádhava*,* and from several of the *Saiva Purânas*, in some of which, as the *Kúrma Purâna*, we have a string of names which appear to be those of a succession of teachers.† The cavern temples of the South of India, in

paper.—" The only apparatus seen is a piece of plank, which, with four pegs, he forms into a kind of long stool; upon this, in a little brass saucer or socket, he places, in a perpendicular position, a hollow bamboo, over which he puts a kind of crutch, like that of a walking crutch, covering that with a piece of common hide: these materials he carries with him in a little bag, which is shown to those who come to see him exhibit. The servants of the house hold a blanket before him, and when it is withdrawn, he is discovered poised in the air, about four feet from the ground, in a sitting attitude, the outer edge of one hand merely touching the crutch, the fingers of that hand deliberately counting beads; the other hand and arm held up in an erect posture. The blanket was then held up before him, and they heard a gurgling noise like that occasioned by wind escaping from a bladder or tube, and when the screen was withdrawn he was again standing on terra firma. The same man has the power of staying under water for several hours. He declines to explain how he does it, merely saying he has been long accustomed to do so." The length of time for which he can remain in his aerial station is considerable. The person who gave the above account says that he remained in the air for twelve minutes; but before the Governor of Madras he continued on his baseless seat for *forty minutes*."—*Asiatic Monthly Journal for March*, 1829.

* See especially the opening of the 5th Act, and Notes.

† SIVA, it is said, appeared in the beginning of the *Kàli* age as SWETA, for the purpose of benefiting the Brahmanas. He resided on the *Himâlaya* mountains, and taught the *Yoga*. He had four chief disciples, one also termed SWETA, and the others SWETASIKHA, SWETÁSWA, and SWETALOHITA. They had twenty-eight disciples—*Sutára*, *Madana*, *Suhotra*, *Kankana*, and twenty-four others. Of these, four, whose names are not mentioned, had ninety-seven disciples, masters of the *Yoga* and inferior portions of SIVA. Those Brahmanas who recite the names of these teachers and offer to them libations acquire *Brahmavidyá*, or knowledge of spirit. That this long string of one hundred and twenty-five names is wholly fictitious, seems improbable, although the list is possibly not very accurate. The four primitive teachers may be imaginary; but it is a curious circumstance that the word *Sweta*, *white*, should be the leading member of each appellation, and that in the person of SIVA, and his first disciple, it should stand alone as SWETA, *the white*. SIVA, however, is always

the subjects of their sculptures, and the decorations of SIVA and his attendants, belong to the same sect;* whilst the philosophical tenets of *Patanjali* are as ancient perhaps as most of the other philosophical systems, and are prior to the *Purânas*, by which they are inculcated in a popular form. The practices of the *Yoga* are also frequently alluded to, and enforced in the *Mahâbhârat*.† There is little reason to question therefore the existence and popularity of the *Yoga* in the early centuries of the Christian era, but whether it was known and cultivated earlier must be matter of vague conjecture alone. As represented in the *Sankaravijaya*, (Section 41) the *Yogis* vindicate their doctrine by texts from the *Vedas*, but the applicability of the texts is there denied, and is certainly far from conclusive or satisfactory.

The principal mode in which the *Yoga* takes a popular shape in Upper India, is probably of comparatively recent origin. This is the sect of *Kânphata Jogis*, who acknowledge as their founder, a teacher named GORAKHNÂTH, traces of whom are found in a *Gorakhkshetra* at *Peshawer*, mentioned by ABULFAZL, and in the district and town of *Gorakhpur*, where

---

painted white, and the names may be contrived accordingly; but we are still at a loss to understand why the god himself should have a European complexion.

* In the temples of *Salsette*, *Elephanta*, and *Ellora*, the principal figure is mostly SIVA, decorated with ear-rings, such as are still worn by the *Kânphata Jogis*; the walls are covered with ascetics in the various *Asanas*, or positions in which the *Yogi* is to sit; a favourite subject of sculpture at *Elephanta* and *Ellora* is the sacrifice of DAKSHA disconcerted, and the guests, though saints and gods, put to rout, bruised and mutilated, by VÎRABHADRA, and the *Ganas* of SIVA, in revenge for that deity's not having been invited, a story told in most of the *Purânas* which inculcate the *Yoga* tenets. The cells attached to some of the temples are also indicative of *Jogi* residence, and one of the caves of *Salsette* is named that of *Jogîswara*, or SIVA, as lord of the *Jogis*. *Transactions of the Literary Society of Bombay*. Vols. 1 and 2.

† These allusions occur in the *Vana Parva* chiefly; whilst in the *Udyoga Parva*, the observances of the *Yoga* are detailed at considerable length, and strenuously enjoined.

also exist a temple and religious establishment of his followers. They hold also in veneration a plain near *Dwáraka*, named *Gorakhkhetr*; and a cavern or subterraneous passage at *Haridwár*. The *Saiva* temples of *Nepal*, those of *Sambunáth*, *Pasupatináth*, and others, belong to the same system, although local legends attached to them, have combined in a curious manner the fictions of the *Bauddha* with those of the Brahmanical mythology.*

From a *Ghoshti*,† or controversial dialogue between KABÍR and GORAKHNÁTH, it would seem that they were personally known to each other, but various texts in the *Bíjek* allude to him as if recently deceased. In either case these two teachers may have been cotemporaries, or nearly so, and the latter therefore flourished in the beginning of the 15th century. According to his followers, he was an incarnation of SIVA; but in the controversial tract above named, he calls himself the son of MATSYENDRA NÁTH, and grandson of ADINÁTH. ‡ MATSYENDRA NÁTH appears to have been the individual who introduced the *Yoga Saivism* into *Nepal*: one of the works of the sect, the *Hatha Pradípa*, makes MATSYENDRA prior to

---

* See Asiatic Researches, vol. XVI. page 471, and Note.

† This has been printed in the first volume of Hindee and Hindustani Selections, for the use of the Interpreters of the Bengal Army, compiled by Captain PRICE. The discussion, in the form of a dialogue, occurs page 140.

‡ आदिनाथके नाती मच्छन्द्रनाथ के पूत।
मैं योगी गोरख अवधूत॥

GORAKH by five spiritual descents,* and this would place the former in the 14th century, supposing the *Kabír* work to be correct in the date it attributes to the latter.

If the date assigned by HAMILTON to the migration of the Hindu tribes from *Chitaur*, the beginning of the 14th century, be accurate,† it is probable that this was the period at which the worship of SIVA, agreeably to the doctrines of MATSYENDRA, or GORAKH, was introduced there, and into the eastern provinces of Hindustan.

The temple of GORAKHNÁTH at *Gorakhpur*, according to the local tradition, was founded by SIVA in the second, or *Treta* age. Of its revolu-

* The list of teachers is thus particularised :-

1. *Adináth.*
2. *Matsyendra.*
3. *Sambara.*
4. *Ananda.*
5. *Bhairava.*
6. *Chourángi.*
7. *Ména.*
8. *Goraksha.*
9. *Virúpáksha.*
10. *Vilesa.*
11. *Manthana Bhairava.*
12. *Siddhabuddha.*
13. *Kanthada.*
14. *Paurandaka.*
15. *Suránánda.*
16. *Siddhapáda.*
17. *Churpati.*
18. *Káneri.*
19. *Pujyapáda.*
20. *Nityanátha.*
21. *Niranjana.*
22. *Kapála.*
23. *Bindu.*
24. *Kákachandíswara.*
25. *Allamá.*
26. *Prabhudeva.*
27. *Goráchili.*
28. *Dindima.*
29. *Bháluki.*
30. *Nágabodha.*
31. *Chandakapálika.*

The author of the *Hatha Pradipa*, ATMA RÁMA, states that these and many more *Mahasiddhas*, or perfect *Yogis*, are in existence. His names are possibly those of the *Mahants*, of a particular establishment: some of them are very unlike Hindu appellatives. If the date assigned to *Gorakhnáth* in the text be rightly conjectured, we cannot assign much more than fifteen years to each of his successors.

† *Hamilton's Nepal*, page 14.

tions subsequent to that period, no account was preserved, until it was converted into a Mohammedan mosque by ALÁ-ADDIN. The temple, after some interval, was re-built in a different situation by an association of the followers of GORAKHNÁTH, and this was possibly the period at which the sect assumed its present form. A similar fate, however, attended this edifice, and it was appropriated by AURANGZEB to the Mohammedan religion. A second interval elapsed before a shrine was again erected to GORAKHNÁTH, when it was re-built on the spot on which it now stands, by BUDDHANÁTH, according to instructions communicated to him by GORAKHNÁTH in person. The present temple is situated to the west of the City of *Gorakhpur*, and attached to it on the south are three temples, consecrated to MAHÁDEVA, PASUPATINÁTH, and HANUMÁN. The inclosure also comprehends the tombs of several eminent members of this communion, and the dwellings of the Mahant and his resident disciples.

GORAKHNÁTH was a man of some acquirement, and has left specimens of his scholarship in two Sanscrit Compositions, the *Goraksha sataka* and *Goraksha kalpa:* third, the *Goraksha sahasra Náma* is, probably, of his writing. The celebrated BHARTRIHARI, the brother of VIKRAMÁDITYA, is said to have been one of his disciples, but chronology will not admit of such an approximation. According to the authorities of the sect, GORAKH is but one of nine eminent teachers, or *Náths*. Of the perfect *Yogis*, or *Siddhas*, eighty-four are enumerated; but it is said, that there have been many more, of whom several are still upon the surface of the earth.

The *Jogis* of GORAKHNÁTH are usually called *Kánphatas*, from having their ears bored, and rings inserted in them at the time of their initiation. They may be of any cast; they live as ascetics, either singly or in

*Maths.** SIVA is the object of their worship—they officiate indeed, as the priests of that deity, in some places, especially at the celebrated *Lát*, or Staff, of BHAIRAVA, at *Bénares*. They mark the forehead with a transverse line of ashes, and smear the body with the same; they dress in various styles, but in travelling usually wear a cap of patch-work and garments dyed with red ochre. Some wear simply a *Dhoti*, or cloth round the loins.

The term *Jogi*, in popular acceptation, is of almost as general application as *Sanyási* and *Vairági*: and it is difficult to fix its import upon any individual class, besides the *Kánphata*: the vagrants so called, following usually the dictates of their own caprice as to worship and belief, and often, it may be conceived, employing the character as a mere plea for a lazy livelihood. The *Jogis* are, indeed, particularly distinguished amongst the different mendicant characters, by adding to their religious personification more of the mountebank than any others: most of the religious mendicants, it is true, deal in fortune-telling, interpretation of dreams, and palmistry; they are also often empirics, and profess to cure diseases with specific drugs, or with charms and spells: but besides these accomplishments, the *Jogi* is frequently musical, and plays and sings; he also initiates animals into his business, and often travels about with a small bullock, a goat, or a monkey, whom he has taught to obey his commands, and to exhibit amusing gesticulations. The dress of this class of *Jogis* is generally a cap and coat, or frock of many colours: they profess to worship SIVA, and often carry the *Linga*, like

---

* Solitary and independant living, however, appears to be improper, if the authority of the *Hatha Pradipa* is to be depended upon.

सुराज्ये धार्म्मिके देशे सुभिक्षे निरुपद्रवे ।
एकान्ते मठिकामध्ये स्थातव्यं हठ योगिना ॥

the *Jangamas*, in the cap; all classes and sects assume the character, and *Musselman Jogis* are not uncommon. One class of the *Hindu Jogis* is called *Sáringihár*, from their carrying a *Saringi*, or small fiddle or lute, with which they accompany their songs: these are usually *Bhásha* stanzas on religious or mythological topics, amongst which, stanzas ascribed to BHATRIHARI, and a *Pauranic* legend of the marriage of SIVA and PÁRVATI, are particularly celebrated. The *Saringihars* beg in the name of BHAIRAVA: another sect of them, also followers of that deity, are termed *Dúrihárs*, from their trafficking in small pedlary, especially the sale of thread and silk, to the housewives of the villages; another class adopt the name of *Matsyendris*, or *Macchendris*, from *Matsyendra*, whom they regard as their founder; and a fourth set are *Bhartriharis*, from a traditional reference to him as the institutor of this particular order. The varieties of this class of mendicants, however, cannot be specified: they are all errants; fixed residences, or *Maths*, of any *Jogis*, except the *Kánphatas*, rarely occurring: an observation that will apply to, perhaps, all the *Saiva* sects, of whom it yet remains to give an account.

JANGAMAS.

The worship of SIVA, under the type of the *Linga*, it has been observed, is almost the only form in which that deity is reverenced.* It is

---

"In a well-governed and well-regulated country, fertile and prosperous, the *Hatha Yogi* (he who upholds the world in eternal continuity,) should reside in a solitary cell, within the precincts of a *Math*." "Other directions follow, applicable to most establishments of a similar nature. The cell should have a small door, be neither too lofty, nor too low, be well smeared with cow-dung, and should be kept clean and free from reptiles: the *Math* should have a temple, a mound or altar, and a well, adjoining, and be enclosed by a wall.

* Its prevalence throughout the whole tract of the *Ganges*, as far as *Benares*, is sufficiently conspicuous. In Bengal, the temples are commonly erected in a range of six, eight, or twelve, on each side of a *Ghát*, leading to the river. At *Kalna* is a circular groupe of one hundred and eight temples,

also perhaps the most ancient object of homage adopted in India, subsequently to the ritual of the VEDAS, which was chiefly, if not wholly, addressed to the elements, and particularly to Fire. How far the worship of the *Linga* is authorised by the VEDAS, is doubtful, but it is the main purport of several of the *Purânas*.* There can be no doubt of its universality at the period of the Mohammedan invasion of India. The idol destroyed by MAHMUD, of *Ghizni*, was nothing more than a *Linga*, being, according to MIRKHOND, a block of stone, of four or five cubits long, and proportionate thickness.† It was, in fact, one of the twelve great *Lingas*,

erected by the Raja of Bardwan. Each of the temples in Bengal, consists of a single chamber, of a square form, surmounted by a pyramidal centre; the area of each is very small, the *Linga*, of black or white marble, occupies the centre; the offerings are presented at the threshold. *Benares*, however, is the peculiar seat of this form of worship: the principal deity VISWESWARA, as observed already, is a *Linga*, and most of the chief objects of the pilgrimage are similar blocks of stone. Particular divisions of the pilgrimage direct visiting forty-seven *Lingas*, all of pre-eminent sanctity; but there are hundreds of inferior note still worshipped, and thousands whose fame and fashion have passed away. If we may believe SIVA, indeed, he counted a hundred *Parárrdhyâs* in *Kási*, of which, at the time he is supposed to tell this to DEVI, he adds sixty crore, or six hundred millions, were covered by the waters of the Ganges. A *Parárrdhya* is said, by the commentator on the *Kási Khanda*, in which this dialogue occurs, to contain as many years of mortals as are equal to fifty of *Brahma's* years. Notwithstanding the acknowledged purport of this worship, it is but justice to state, that it is unattended in Upper India by any indecent or indelicate ceremonies, and it requires a rather lively imagination to trace any resemblance in its symbols to the objects they are supposed to represent. The absence of all indecency from public worship and religious establishments in the Gangetic Provinces, was fully established by the Vindicator of the Hindus, the late General STUART, and in every thing relating to actual practice, better authority cannot be desired. (Vindication, Part 1st, 99, and more particularly Part 2d, 135).

* The *Skanda Purâna*, which contains the *Kási Khanda*, particularly inculcates the worship of SIVA in this form; so do the *Siva*, *Brahmanda*, and *Linga Puranas*.

† The following is the passage from the *Rozet as Sefa*, alluded to:

وان خانه که سومنات درانجا بود طول وعرض تمام داشت چنان که پنجاه وشش
ستون وقایه سقف ان کرده بودند وسومنات صنمی بود از سنگ تراشیده طولش مقدار
پنج گز وعرض ان ظاهر بود وگرد در زیر زمین مخفی ویمین الدوله محمود ببتخانه درامده

then set up in various parts of India, several of which, besides *Someswara*, or *Somanáth*, which was the name of the SIVA, demolished by MAHMUD, were

باگرز گران سنگ سومنات را درهم شکست ومقداري ازان سنگرا فرمود تا بار کرده بغزنین میبردند ودر آستانه مسجد جامع بیندا ختند

"The temple in which the Idol of *Somnath* stood, was of considerable extent, both in length and breadth, and the roof was supported by fifty-six pillars in rows. The Idol was of polished stone, its height was about five cubits, and its thickness in proportion: two cubits were below ground. MAHMUD having entered the temple, broke the stone *Somnáth*, with a heavy mace: some of the fragments he ordered to be conveyed to *Ghizni*, and they were placed at the threshold of the great Mosque." Another authority, the *Tekkat Akbeeri*, a history of Akber's reign, with a preliminary Sketch of Indian History, has the following:

لشکر بجانب هندوستان بقصد سومنات کشیده واین سومنات شهریست بزرگ برساحل دریا محیط معبد براهمنه است وبتان دراین بتخانه بسیار بوده وبت بزرگ را سومنات نامند در تواریخ بنظر رسیده که درزمان ظهور حضرت ختمي پناه مصطفي صلی الله علیه وسلم این بترا ازخانه کعبه براورده بودند تا از این کتب سلف براهمنه معلوم میشود ذکر چنین است از زمان کشن که چهارهزار سال میشد معبود براهمنه است وبقول براهمنه کشن اینجا غیب نموده — القصه چون سلطان به شهر نهرواله پتن رسید شهر را خالي دید فرمود تا غلبه برداشتند وزاه سومنات پیش گرفته چون بسومنات رسیدند اهل انجا قلعه را برروي سلطان کشیدند وبعد از جنگ وتردد بسیار قلعه مفتوح گشت لوازم بتاراج وغارت بعمل آمد وخلق کثیر بقتل واسیر شد بتخانها شکسته از بیخ برکندند وسنگ سومنات را پارچه پارچه کرده پاره را بغزنین برده بدر مسجد جامع گذاشته وسالها سنگ اینجا بود

"In the year 415 (*Hijera*) MAHMUD determined to lead an army against *Somnath*, a city on the sea-shore, with a temple appertaining to the followers of BRAHMA; the temple contained many idols, the principal of which was named *Somnath*. It is related in some histories that this idol was carried from the *Kaaba*, upon the coming of the Prophet, and transported to India. The Brahmanical records, however, refer it to the time of KRISHNA, or an antiquity of 4000 years. KRISHNA, himself, is said to have disappeared at this place.

"When the Sultan arrived at *Neherwaleh*, (the capital of Guzerat) he found the city deserted, and carrying off such provisions as could be procured, he advanced to *Somnath*: the inhabitants of

destroyed by the early Mahommedan conquerors* Most, if not all of them, also are named in works, of which the date cannot be much later than the

---

this place shut their gates against him, but it was soon carried by the irresistible valour of his troops, and a terrible slaughter of its defenders ensued. The temple was levelled with the ground: the idol *Somnath*, which was of stone, was broken to pieces, and in commemoration of the victory, a fragment was sent to *Ghizni*, where it was laid at the threshold of the principal mosque, and was there many years."

These statements shew that the idol was nothing more than a block of stone, of very moderate dimensions, like the common representation of the type of SIVA. FERISHTA, however, has converted it into something very different, or a colossal figure of the deity himself, and following Colonel Dow's version of that compiler, the historian of British India gives the following highly coloured account of a transaction which never took place. "Filled with indignation at sight of the gigantic idol, MAHMUD aimed a blow at its *head*, with his iron mace. The *nose* was struck off from its *face*. In vehement trepidation, the *Brahmans* crowded round and offered millions to spare the god. The *Omrahs*, dazzled with the ransom, ventured to counsel acceptance. MAHMUD crying out that he valued the title of breaker not seller of idols, gave orders to proceed with the work of destruction. At the next blow the *belly* of the *idol* burst open, and forth issued a vast treasure of diamonds, rubies and pearls, rewarding the holy perseverance of MAHMUD, and explaining the devout liberality of the *Brahmans!*" (Vol. I. 491.)

* The twelve *Lingas* are particularised in the *Kedára Kalpa*, of the *Nandi Upapuráná*, where SIVA is made to say—"I am omnipresent, but I am especially in twelve forms and places." These he enumerates, and they are as follow:

1. *Somanátha*, in *Saurashtra*, i. e. *Surat*, in its most extensive sense, including part of *Guzerat*, where, indeed, *Patana Somnáth*, or the city of *Somnath*, is still situated.

2. *Mallikárjuna*, or *Sri Saila*, described by COLONEL MACKENZIE, the late Surveyor General. Asiatic Researches, Vol. 5th.

3. *Mahákála*, in *Ougein*. This deity of stone was carried to *Dehli*, and broken there upon the capture of *Ougein*, by ALTUMSH. A. D. 1231,—Dow. According to the *Tebkat Akberi*, the shrine was then three hundred years old.

4. *Omkára* is said to have been in *Ujayin*, but it is probably the shrine of MAHADEO, at *Omkára Mandatta*, on the *Nurmedá*.

5. *Amareswara* is also placed in *Ujayin*: an ancient temple of MAHADEO, on a hill near *Ujayin*, is noticed by Dr. HUNTER, Asiatic Researches, Vol. 6th, but he does not give the name or form.

eighth or ninth century, and it is therefore, to be inferred, with as much certainty as anything short of positive testimony can afford, that the worship of SIVA, under this type, prevailed throughout India at least as early as the fifth or sixth century of the Christian era. Considered as one great branch of the universal public worship, its prevalence, no doubt, dates much earlier; but the particular modifications under which the several types received their local designations, and became entitled to special reverence, are not in every case of remote antiquity.

One of the forms in which the *Linga* worship appears, is that of the *Lingayets*, *Lingaivants*, or *Jangamas*, the essential characteristic of which is wearing the emblem on some part of the dress or person. The type is of a small size, made of copper or silver, and is commonly worn suspended in a case round the neck, or sometimes tied in the turban. In common with the *Saivas*, generally, the *Jangamas* smear their foreheads with *Vibhúti* or ashes, and wear necklaces, and carry rosaries, made of the *Rudrâksha* seed.

---

6. *Vaidyanáth*, at *Deogerh*, in Bengal; the temple is still in being, and is a celebrated place of pilgrimage.

7. *Ramésa*, at *Setubandha*, the island of *Ramisseram*, between Ceylon and the continent; this *Lingam* is fabled to have been set up by RAMA. The temple is still in tolerable repair, and is one of the most magnificent in India. The gateway is one hundred feet high. It has been repeatedly described, and is delineated in DANIEL's Superb Plates of Indian Antiquities, from which it has been copied into LANGLÈS Monuments de L'Hindoostan.

8. *Bhímasankara*, in *Dákini*, which is, in all probability, the same with *Bhiméswara*, a *Linga* worshipped at *Dracharam*, in the *Rájamahendri* district, and there venerated as one of the principal twelve.

10. *Tryambaka*, on the banks of the *Gomati*; whether the temple still exists I have no knowledge.

11. *Gautamésa* is another of the twelve, whose original site and present fate are uncertain.

12. *Kedárèsa*, or *Kedaranáth*, in the *Himálaya*, has been repeatedly visited by late travellers. The deity is represented by a shapeless mass of rock.

The clerical members of the sect usually stain their garments with red ochre. They are not numerous in Upper India, and are rarely encountered, except as mendicants, leading about a bull, the living type of *Nandi*, the bull of SIVA, decorated with housings of various colours, and strings of Cowri shells: the conductor carries a bell in his hand, and thus accompanied goes about from place to place, subsisting upon alms. In the South of India, the *Lingayets* are very numerous, and the officiating priests of the *Saiva* shrines, are commonly of this sect,* when they bear the designations of *Arádhya* and *Pandaram*.† The sect is also there known by the name of *Vira Saiva*. The following account of the restorer, if not the founder of the faith, as well as a specimen of the legends by which it is maintained, are derived from the *Básava Purána*.

According to the followers of this faith, which prevails very extensively in the Dekhin, *Báswa*, *Básava*, *Báswana*, or *Báswapa* or *Básavappa*, different modes of writing his name, only restored this religion, and did not invent it. This person, it is said, was the son of *Mádiga Ráya*, a Brahman, and *Madevi* written also *Madala arasu* and *Mahámbá*, inhabitants of *Hinguleswar Parvati Agrahâram*, on the west of *Sri Saila*, and both devout worshippers of SIVA. In recompense of their piety, *Nandi*, the bull of SIVA, was born on earth as their son, becoming incarnate by command of SIVA, on his learning from NÁREDA, the decline of the *Saiva* faith, and prevalence of other less orthodox systems of religion. The child was denominated after the *Báswa* or *Básava*, the bull of the deity. On his arriving at the age of investiture, he refused to assume the thread ordinarily worn by Brahmans, or to acknowledge any *Guru*, except ISWARA or SIVA. He then departed to the town of *Kalyán*, the capital of *Bijala* or *Vijala Ráya*, and obtained in marriage *Gangámbá*, the daughter of the *Dandanáyak*, or minister of police. From thence he repaired to *Sangameswara*, where he received from *Sangameswara Swámi*, initiation in the tenets of the *Vira Saiva* faith. He was invited back from this place to succeed his father-in-law upon his decease, in the office he had held.

---

* They also officiate in this capacity at the temple of *Kedárnáth*, in *Benares*.

† This word seems to be properly *Pánduranga*, (पाण्डुरङ्गः) pale complexioned, from their smearing themselves with ashes. It is so used in *Hemachandra's* history of *Mahávira*, when speaking of the *Saiva Brahmans*.

After his return to *Kalyán*, his sister, who was one of his first disciples, was delivered of a son, *Chenna Básava*, who is not unfrequently confounded with his uncle, and regarded, perhaps more correctly, as the founder of the sect.

After recording these events, the work enumerates various marvellous actions performed by *Básava* and several of his disciples, such as converting grains of corn to pearls —discovering hidden treasures—feeding multitudes—healing the sick, and restoring the dead to life. The following are some of the anecdotes narrated in the *Purána*.

Básava having made himself remarkable for the profuse bounties he bestowed upon the *Jangamas*, helping himself from the Royal Treasury for that purpose, the other ministers reported his conduct to *Bijala*, who called upon him to account for the money in his charge. *Básava* smiled, and giving the keys of the Treasury to the king, requested him to examine it, which being done, the amount was found wholly undiminished. *Bijala* thereupon caused it to be proclaimed, that whoever calumniated *Básava*, should have his tongue cut out.

A *Jangama*, who cohabited with a dancing girl, sent a slave for his allowance of rice to the house of *Básava*, where the messenger saw the wife of the latter, and on his return reported to the dancing girl the magnificence of her attire. The mistress of the *Jangama* was filled with a longing for a similar dress, and the *Jangama* having no other means of gratifying her, repaired to *Básava*, to beg of him his wife's garment. *Básava* immediately stripped *Gangámbá*, his wife, and other dresses springing from her body, he gave them all to the *Jangama*.

A person of the name of *Kanapa*, who regularly worshipped the image of EKÁMRESWARA, imagining the eyes of the deity were affected, plucked out his own, and placed them in the sockets of the figure. SIVA, pleased with his devotion, restored his worshipper his eyes.

A devout *Saiva* named *Mahadevala Macháya*, who engaged to wash for all the *Jangamas*, having killed a child, the Raja ordered *Básava* to have him secured and punished; but *Básava* declined undertaking the duty, as it would be unavailing to offer any harm to the worshippers of SIVA. *Bijala* persisting, sent his servants to seize and tie him to the legs of an elephant, but *Macháya* caught the elephant by the trunk, and dashed him and his attendants to pieces. He then proceeded to attack the Raja, who being alarmed, appli-

ed to *Básava*, and by his advice, humbled himself before the offended *Jangama*. *Básava* also deprecated his wrath, and *Machaya* being appeased, forgave the king, and restored the elephant and the guards to life.

A poor *Jangam* having solicited alms of *Kinnaráya*, one of *Basava's* chief disciples, the latter touched the stones about them with his staff, and converting them into gold, told the *Jangam* to help himself.

The work is also in many places addressed to the *Jainas*, in the shape of a dialogue between some of the *Jangama* saints and the members of that faith, in which the former narrate to the latter instances of the superiority of the *Saiva* religion, and the falsehood of the *Jain* faith, which appears to have been that of *Bijala Rây*a, and the great part of the population of *Kalyána*. In order to convert them *Ekánta Ramáya*, one of *Básava's* disciples, cut off his head in their presence, and then marched five days in solemn procession, through and round the city, and on the fifth day replaced his head upon his shoulders. The *Jain* Pagodas were thereupon, it is said, destroyed by the *Jangamas*. It does not appear, however, that the king was made a convert, or that he approved of the principles and conduct of his minister. He seems, on the contrary, to have incurred his death by attempting to repress the extension of the *Vira Saiva* belief. Different authorities, although they disagree as to the manner in which *Bijala* was destroyed, concur in stating the fact: the following account of the transaction is from the present work.

"In the city of *Kalyána* were two devout worshippers of SIVA, named *Allaya* and *Madhuvaya*. They fixed their faith firmly on the divinity they adored, and assiduously reverenced their spiritual preceptor, attending upon *Básava* whithersoever he went. The king, *Bijala*, well knew their merits, but closed his eyes to their superiority, and listening to the calumnious accusations of their enemies, commanded the eyes of *Allaya* and *Madhuvaya* to be plucked out. The disciples of *Básava*, as well as himself, were highly indignant at the cruel treatment of these holy men, and leaving to *Jagaddeva* the task of putting *Bijala* to death, and denouncing imprecations upon the city, they departed from *Kalyána*—*Básava* fixed his residence at *Sangameswara*.

Machaya, Bommidevaya, Kinnara, Kannatha, Bommadeva, Kakaya, Masanaya, Kolakila Bommadeva, Kesirajaya, Mathirajaya, and others, announced to the people, that the

fortunes of *Bijala* had passed away, as indicated by portentous signs; and accordingly the crows crowed in the night, jackalls howled by day; the sun was eclipsed, storms of wind and rain came on, the earth shook, and darkness overspread the heavens. The inhabitants of *Kalyána* were filled with terror.

When *Jagaddeva* repaired home, his mother met him, and told him that when any injury had been done to a disciple of the *Saiva* faith, his fellow should avenge him or die. When *Daksha* treated SIVA with contumely, PARVATI threw herself into the flames, and so, under the wrong offered to the saints, he should not sit down contented: thus saying, she gave him food at the door of his mansion. Thither also came *Mallaya* and *Bommaya*, two others of the saints, and they partook of *Jagaddeva's* meal. Then smearing their bodies with holy ashes, they took up the spear, and sword, and shield, and marched together against *Bijala*. On their way a bull appeared, whom they knew to be a form of *Básava* come to their aid, and the bull went first, even to the court of the king, goring any one that came in their way, and opening a clear path for them. Thus they reached the court, and put *Bijala* to death in the midst of all his courtiers, and then they danced, and proclaimed the cause why they had put the king to death. *Jugaddeva* on his way back, recalling the words of his mother, stabbed himself. Then arose dissension in the city, and the people fought amongst themselves, and horses with horses, and elephants with elephants, until, agreeably to the curse denounced upon it by *Básava* and his disciples, *Kalyána* was utterly destroyed.

Básava continued to reside at *Sangameswara*, conversing with his disciples, and communing with the divine Essence, and he expostulated with SIVA, saying 'By thy command have I, and thy attendant train, come upon earth, and thou hast promised to recall us to thy presence when our task was accomplished." Then SIVA and PÁRVATÍ came forth from the *Sangameswara Lingam*, and were visible to *Básava*, who fell on the ground before them. They raised him, and led him to the sanctuary, and all three disappeared in the presence of the disciples, and they praised their master, and flowers fell from the sky, and then the disciples spread themselves abroad, and made known the absorption of *Básava* into the emblem of SIVA."—*Mackenzie Collection, Vol. 2nd. Hálakanara MSS.*

The date of the events here recorded is not particularised, but from various authorities, they may be placed with confidence in the early part of the eleventh century*.

The MACKENZIE Collection, from which the above is taken, contains a number of works† of a similar description, in the ancient *Kanara* dialect. There are also several works of the same nature in *Telugu*, as the *Básavêswara Purána*, *Panditárádhya Cheritra*, and others. Although the language of these compositions may now have become obscure or obsolete, it is not invariably so, and at any rate was once familiar. This circumstance, and the marvellous character of the legends they relate, specimens of which have been given in the above account of the founder of the sect, adapted them to the comprehension and taste of the people at large, and no doubt therefore exercised a proportionate influence. Accordingly, WILKS, BUCHANAN, and DUBOIS, represent the *Lingawants* as very numerous in the *Dékhin*, especially in *Mysore*, or those countries constituting ancient *Kanara*, and they are also common in *Telingana*. In Upper India there are no popular works current, and the only authority is a learned *Bháshya*, or Comment, by NILKANTHA, on the *Sútras* of VYÁSA, a work not often met with, and, being in Sanscrit, unintelligible to the multitude.‡

---

* Colonel WILKS gives the same date, (Mysore 1, 506,) but terms the founder *Chen Bas Ishwar*, intending clearly *Chenna*, (little) *Básava*, the nephew of *Básava*, or *Basaveswara*. BUCHANAN has the name *Báswana*, (Mysore 1, 240,) but agrees nearly in the date, placing him about seven hundred years ago.

† As the *Báswana Purana*, *Chenna Básava Purána*, *Prabhulinga Lílá*, *Saranu Lilámrita*, *Viraktaru Kávyam*, and others, containing legends of a vast number of *Jangama* Saints and Teachers.—*Mackenzie Collection*, vol. 2.

‡ Besides the *Jangama* priests of *Kedárnáth*, an opulent establishment of them exists at *Benares*: its wealth arises from a number of houses, occupying a considerable space, called the *Jangam Bárí*: the title to the property is said to be a grant to the *Jangamas*, regularly executed by MAN SINH, and preserved on a copper plate: the story with which the vulgar are deluded is,

PARAMAHANSA.

According to the introduction to the *Dwádasa Mahávákya*, by a *Dandi* author, VAIKUNTHA PURI, the *Sanyási* is of four kinds, the *Kutíchara*, *Bahudaka*, *Hansa*, and *Paramahansa*: the difference between whom, however, is only the graduated intensity of their self-mortification and profound abstraction. The *Paramahansa** is the most eminent of these gradations, and is the ascetic who is solely occupied with the investigation of BRAHMA, or spirit, and who is equally indifferent to pleasure or pain, insensible of heat or cold, and incapable of satiety or want.

Agreeably to this definition, individuals are sometimes met with who pretend to have attained such a degree of perfection: in proof of it they go naked in all weathers, never speak, and never indicate any natural want: what is brought to them as alms or food, by any person, is received by the attendants, whom their supposed sanctity, or a confederation of interest attaches to them, and by these attendants they are fed and served on all occasions, as if they were as helpless as infants. It may be supposed

---

that it was granted by one of the Emperors of Hindustan, in consequence of a miracle performed by a *Jangama* devotee. In proof of the veracity of his doctrine, he proposed to fly: the Emperor promised to give him as much ground as he could traverse in that manner: not quite satisfied of the impossibility of the feat, he had a check string tied to the ascetic's legs, and held by one of the attendants: the *Jangama* mounted, and when he reached the limits of the present *Jangama Bárí*, the Emperor thinking that extent of ground sufficiently liberal, had him constrained to fly back again.

* MOOR, in his Hindu Pantheon, (page 352) asserts, upon, as he says, authentic information, that the *Paramahansas* eat human flesh, and that individuals of this sect are not very unusually seen about *Benares*, floating down the river, and feeding upon a corpse: it is scarcely necessary to add that he is wholly wrong: the passage he cites from the Researches is quite correct, when it describes the *Paramanhansa* as an ascetic of the orthodox sects, in the last stage of exaltation; and the practice he describes, although far from usual, is sometimes heard of as a filthy exhibition, displayed for profit by individuals of a very different sect, those who occupy the ensuing portion of the present text—the *Aghoris*.

that, not unfrequently, there is much knavery in this helplessness, but there are many Hindus whose simple enthusiasm induces them honestly to practice such self-denial, and there is little risk in the attempt, as the credulity of their countrymen, or rather countrywomen, will, in most places, take care that their wants are amply supplied: these devotees are usually included amongst the *Saiva* ascetics; but it may be doubted whether the classification is correct.

AGHORIS.

The pretended insensibility of the *Paramahansa* being of a passive nature, is, at least, inoffensive, and even where it is mere pretence, the retired nature of the practice renders the deception little conspicuous or revolting. The same profession of worldly indifference characterises the *Aghori*, or *Aghorapanthi;* but he seeks occasions for its display, and demands alms as a reward for its exhibition.

The original *Aghori* worship seems to have been that of *Devi* in some of her terrific forms, and to have required even human victims for its performance.* In imitation of the formidable aspect under which the goddess was worshipped, the appearance of her votary was rendered as hideous as possible, and his wand and water-pot were a staff set with bones and the upper half of a skull: the practices were of a similar nature, and flesh and spirituous liquors constituted, at will, the diet of the adept.

---

* It may be credulity or calumny, but the *Bhils*, and other hill tribes, are constantly accused by Sanscrit writers of the eleventh and twelfth centuries, as addicted to this sanguinary worship. The *Vrihat Katha* is ful of stories to this effect, the scene of which is chiefly in the *Vindhyá* range. Its covert existence in cities is inferable from the very dramatic situation in *Bhavabhuti's Drama, Málati* and *Mádhava*, where *Mádhava* rescues his mistress from the *Aghora Ghanta*, who is about to sacrifice *Málati* at the shrine of *Chamundá*.

The regular worship of this sect has long since been suppressed, and the only traces of it now left are presented by a few disgusting wretches, who, whilst they profess to have adopted its tenets, make them a mere plea for extorting alms. In proof of their indifference to worldly objects, they eat and drink whatever is given to them, even ordure and carrion. They smear their bodies also with excrement, and carry it about with them in a wooden cup, or skull, either to swallow it, if by so doing they can get a few pice; or to throw it upon the persons, or into the houses of those who refuse to comply with their demands. They also, for the same purpose, inflict gashes on their limbs, that the crime of blood may rest upon the head of the recusant; and they have a variety of similar disgusting devices to extort money from the timid and credulous Hindu. They are, fortunately, not numerous, and are universally detested and feared.

URDDHABÁHUS, ÁKÁS MUKHÍS, AND NAKHÍS.

Personal privation and torture being of great efficacy in the creed of the Hindus, various individuals, some influenced by credulity, and some by knavery, have adopted modes of distorting their limbs, and forcing them out of their natural position, until they can no longer resume their ordinary direction.

The *Urddhabáhus** extend one or both arms above their heads, till they remain of themselves thus elevated. They also close the fist, and the nails being necessarily suffered to grow, make their way between the metacarpal bones, and completely perforate the hand. *The Urddhabáhus* are solitary mendicants, as are all of this description, and never have any

* *Urddha*, above, and *Báhu*, the arm.

fixed abode: they subsist upon alms; many of them go naked, but some wear a wrapper stained with ochre; they usually assume the *Saiva* marks, and twist their hair so as to project from the forehead, in imitation of the *Jatá* of SIVA.

The *Akásmukhis** hold up their faces to the sky, till the muscles of the back of the neck become contracted, and retain it in that position: they wear the *Jatá*, and allow the beard and whiskers to grow, smearing the body with ashes: some wear coloured garments: they subsist upon alms.

The *Nakhis* are of a similar description with the two preceding, but their personal characteristics of a less extravagant nature, being confined to the length of their finger nails, which they never cut: they also live by begging, and wear the *Saiva* marks.

GUDARAS.

The *Gúdaras* are so named from a pan of metal which they carry about with them, and in which they have a small fire, for the purpose of burning scented woods at the houses of the persons from whom they receive alms. These alms they do not solicit further than by repeating the word *Alakh*,† expressive of the indescribable nature of the deity. They have a peculiar garb, wearing a large round cap, and a long frock or coat, stained with ochery clay. Some also wear ear-rings, like the *Kánphata Jogis*, or a cylinder of wood passed through the lobe of the ear, which they term the *Khechari Mudrá*, the seal or symbol of the deity, of him who moves in the heavens.

---

* *Ákás*, the sky, and *Mukha*, the face.

† *A*, the negative prefix, and *Lakshma*, a mark, a distinction.

RÚKHARAS, SÚKHARAS, AND ÚKHARAS.

The *Súkharas* are *Saiva* mendicants, distinguished by carrying a stick three spans in length: they dress in a cap and sort of petticoat stained with ochery earth, smear their bodies with ashes, and wear ear-rings of the *Rudráksha* seed. They also wear over the left shoulder a narrow piece of cloth dyed with ochre, and twisted, in place of the *Zenar*.

The *Rúkharas* are of similar habits and appearance, but they do not carry the stick, nor wear the *Rudráksha* ear-rings, but in their place metallic ones: these two classes agree with the preceding in the watch-word, exclaiming *Alakh*, as they pass along; the term is, however, used by other classes of mendicants.

The *Úkharas* are said to be members of either of the preceding classes, who drink spirituous liquors, and eat meat: they appear to be the refuse of the three preceding mendicant classes, who, in general, are said to be of mild and inoffensive manners.

KARÁ LINGIS.

These are vagabonds of little credit, except sometimes amongst the most ignorant portions of the community: they are not often met with: they go naked, and to mark their triumph over sensual desires, affix an iron ring and chain on the male organ:* they are professedly worshippers of SIVA.

---

* These ascetics were the persons who attracted the notice of the earlier travellers, especially BERNIER and TAVERNIER. They were more numerous then, probably, than they are at present, and this appears to be the case with most of the mendicants who practised on the superstitious admiration of the vulgar.

SANYÁSIS, BRAHMACHÁRIS, AND AVADHÚTAS.

Although the terms *Sanyási* and *Vairági* are, in a great measure, restricted amongst the *Vaishnavas* to peculiar classes, the same limit can scarcely be adopted with regard to the *Saivas*. All the sects, except the *Sanyogi Atits*, are so far *Sanyási*, or excluded from the world, as not to admit of married teachers, a circumstance far from uncommon, as we have seen amongst the more refined followers of VISHNU. Most of the *Saiva* sects, indeed, are of a very inferior description to those of the *Vaishnavas*.

Besides the individuals who adopt the *Dańda Grahana*, and are unconnected with the *Dasnámis*, there is a set of devotees who remain, through life, members of the condition of the *Bramachári*, or student:* these are also regarded as *Sanyásis*, and where the term is used in a definite sense, these twelve kinds, the *Dandis*, *Brahmacháris*, and ten *Dasnámi* orders are implied. In general, however, the term, as well as *Avadhúta*, or *Avdhauta*, and *Alakhnámi*, express all the *Saiva* classes of mendicants, except, perhaps, the *Jogis*.

NÁGAS.

The *Saiva Sanyásis* who go naked, are distinguished by this term. They smear their bodies with ashes, allow their hair, beards, and whiskers to grow, and wear the projecting braid of hair, called the *Jatá*; like the *Vairági Nágas*, they carry arms, and wander about in troops, soliciting alms, or levying contributions. The *Saiva Nágas* are chiefly the refuse

---

* The *Dírghakála Brahmacharyam*, or protracted period of studentship is, however, amongst the acts enumerated in various authorities of indisputable character, as those which are prohibited in the *Kali* age.

of the *Dańḍí* and *Atít* orders, or men who have no inclination for a life of study or business: when weary of the vagrant and violent habits of the *Nága*, they re-enter the better disposed classes, which they had first quitted. The *Saiva Nágas* are very numerous in many parts of India, though less so in the Company's provinces than in any other: they were formerly in great numbers in *Bundelkand*,* and HIMMET BAHADAR was a pupil of one of their Mahants, RÁJENDRA GIR, one of the lapsed *Dasnámi* ascetics. These *Nágas* are the particular opponents of the *Vairági Nágas*, and were, no doubt, the leading actors in the bloody fray at *Haridwar*,† which had excluded the *Vaishnavas* from the great fair there, from 1760, till the British acquired the country. The leader of the *Saiva* party was called DHOKAL GIR, and he, as well as the spiritual guide of HIMMET BAHADAR, was, consequently, of the *Dasnámí* order, which would thus seem to be addicted to violent and war-like habits. With respect to the sanguinary affray at *Haridwár*, in which we are told eighteen thousand *Bairágis* were left dead on the field, there is a different legend current of the origin of the conflict, from that given in the Researches, but neither of them is satisfactory, nor indeed is any particular cause necessary, as the opposite objects of worship, and the pride of strength and

---

* A party of them attacked Colonel GODDARD's troops in their march between *Dorawal* and *Herapur*, the assailants were no more than four or five hundred, but about two thousand hovered about the rear of the army: they are called *Pandarums* in the narrative, but were evidently *Saiva Nágas*. PENNANT's Hindustan, 2, 192. The Vindicator of the Hindus, speaking of them, observes, that they often engage in the rival contests of the Indian Chiefs, and, on a critical occasion some years ago, six thousand of them joined the forces of the Mahratta Chief SINDIAH, and enabled him, with an equal number of his own troops, to discomfit an army of thirty thousand men, headed by one of his rebellious subjects.

† A. R. 11. 455. It may be observed, that a very accurate account is given in the same place of the general appearance and habits of the *Saiva Sanyásis* and *Jogis*, the *Vaishnava Vairágis*, and *Udásis* of *Nanckshah*. The term *Gosain*, as correlative to *Sanyasi*, is agreeable to common usage, but, as has been elsewhere observed, is more strictly applicable to very different characters.

numbers, and consequent struggle for pre-eminence, are quite sufficient to account for the dispute.*

SAKTAS.

The worshippers of the SAKTI, the power or energy of the divine nature in action, are exceedingly numerous amongst all classes of Hindus.† This active energy is, agreeably to the spirit of the mythological system, personified, and the form with which it is invested considered as the especial object of veneration, depends upon the bias entertained by the individuals towards the adoration of VISHNU or SIVA. In the former case, the personified *Sakti* is termed LAKSHMÍ, or MAHÁ LAKSHMÍ, and in the latter, PÁRVATI, BHAVÁNI, or DURGÁ. Even SARASWATÍ enjoys some portion of homage, much more than her lord, BRAHMÁ, whilst a vast variety of inferior beings of malevolent character, and formidable aspect, receive

---

* The irregular practices of these and other mendicants, have attracted the lash of KABIR, in the following Remaini:

REMAINI 69.

ऐसा योगी न देखा भाई।
भूल किये लिये गफलाई, &c.

"I never beheld such a *Jogi*, oh brother! forgetting his doctrine, he roves about in negligence. He follows, professedly, the faith of MAHÁDEVA, and calls himself an eminent teacher; the scene of his abstraction is the fair or market. MÁYÁ is the mistress of the false saint. When did DATTATREYA demolish a dwelling; when did SÚKADEVA collect an armed host; when did NÁRADA mount a matchlock; when did VYÁSADEVA blow a trumpet. In making war, the creed is violated. Is he an *Atti*, who is armed with a quiver? Is he a *Virakta*, who is filled with covetousness? His garb is put to shame by his gold ornaments; he has assembled horses and mares; is possessed of villages; is called a man of wealth; a beautiful woman was not amongst the embellishments of *Sanaka*, and his brethren; he who carries with him a vessel of ink, cannot avoid soiling his raiment.

† It has been computed, that of the Hindus of Bengal, at least three-fourths are of this sect: of the remaining fourth, three parts are *Vaishnavas*, and one *Saivas*, &c.

the worship of the multitude. The bride of SIVA, however, in one or other of her many and varied forms, is by far the most popular emblem in Bengal, and along the Ganges.

The worship of the female principle, as distinct from the divinity, appears to have originated in the literal interpretation of the metaphorical language of the *Vedas*, in which the *will* or *purpose to create* the universe, is represented as originating from the creator, and co-existent with him as his bride, and part of himself. Thus in the *Rig Veda*, it is said "That divine spirit breathed without afflation single, with *(Swadha)* her who is sustained within him; other than him nothing existed. First desire was formed in his mind, and that became the original productive seed,* and the *Sáma Veda*, speaking of the divine cause of creation, says, "He felt not delight, being alone. He wished another, and instantly became such. He caused his ownself to fall in twain, and thus became husband and wife. He approached her, and thus were human beings produced."† In these passages it is not unlikely that reference is made to the primitive tradition of the origin of mankind, but there is also a figurative representation of the first indication of *wish* or *will* in the Supreme Being. Being devoid of all qualities whatever, he was alone, until he permitted the wish to be multiplied, to be generated within himself. This wish being put into action, it is said, became united with its parent, and then created beings were produced. Thus this first manifestation of divine power is termed *Ichchhárúpaá*, personified desire, and the creator is designated as *Swechchamaya*,‡ united with his own will,

---

* Asiatic Researches, VIII. 393.

† Asiatic Researches, VIII. 426.

‡ Thus, in the *Brahma Vaivertta Purána*, which has a whole section dedicated to the manifestations of the female principle, or a *Prakriti Khanda*.

whilst in the *Vedánta* philosophy, and the popular sects, such as that of KABIR, and others, in which all created things are held to be illusory, the *Sakti*, or active will of the deity, is always designated and spoken of as *Mayá* or *Mahámayá*, original deceit or illusion.*

Another set of notions of some antiquity which contributed to form the character of the *Sakti*, whether general or particular, were derived from the *Sánkhya* philosophy. In this system, nature, *Prakriti*, or *Múla Prakriti*, is defined to be of eternal existence and independant origin, distinct from the supreme spirit, productive though no production, and the plastic origin of all things, including even the gods. Hence *Prakriti* has come to be regarded as the mother of gods and men, whilst as one with matter, the source of error, it is again identified with *Máyá*, or delusion, and as co-existent with the supreme as his *Sákti*, his personified energy, or his bride.†

एवं रूपं विभुर्भगवानेक एव सः ।
दिग्भिश्च नभसा सार्द्धं शून्यंविश्वं ददर्श ह ॥
आलोच्य मनसा सर्व्वं एकमेवा सहायवान्
स्वेच्छया स्वभुमारेभे सृष्टिंस्वेच्छामयः प्रभुः ॥

The Lord was alone invested with the Supreme form, and beheld the whole world, with the sky and regions of space, a void. Having contemplated all things in his mind, he, without any assistant, began with the will, to create all things. He, the Lord, endowed with the wish for creation.

* So also in the authority last quoted.

साच ब्रह्मस्वरूपा मायानित्या सनातनी ।

She (*Prakriti*,) one with, *Brahma*, is *Mayá*, eternal, everlasting; and in the *Kalika Purána*

अभिन्ना प्रकृति र्या सा जन्तून्मोहयति

Prakriti is termed Inherent *Mayá*, because she beguiles all beings.

† In the *Gita*, *Prakriti* is identified with all the elementary predicates of matter.

भूमिरापोनलोवायुः खंमनोबुद्धिरेवच ।
अहंकार इतीयं मेभिन्नाप्रकृतिरष्टधा ॥

These mythological fancies have been principally disseminated by the *Puránas*, in all which *Prakriti*, or *Máyá*, bears a prominent part. The aggregate of the whole is given in the *Brahma Vaivartta Purána*, one section of which, the *Prakriti Khanda*, is devoted to the subject, and in which the legends relating to the principal modifications of the female principle are narrated.

According to this authority, BRAHMA, or the supreme being, having determined to create the universe by his super-human power, became two-fold, the right half becoming a male, the left half a female, which was *Prakriti*. She was of one nature with BRAHMA. She was illusion, eternal and without end: as is the soul, so is its active energy; as the faculty of burning is in fire.* In another passage it is said, that KRISHNA, who is in this work identified with the Supreme, being alone invested with the

---

This, my *Prakriti*, is inherently eight-fold, or earth, water, fire, air, ether, mind, intellect, individuality."

So also the *Kúrma Purána* (Chapter 12).

तस्य सर्व्वं जगन्मूर्त्तिः शक्तिर्मायेति विश्रुता।
तदेवं भ्रामयेदीशो मायावी पुरुषोत्तमः।
सैवामायात्मिकाशक्तिः सर्व्वाकारा सनातनी।
विश्वरूपं महेशस्य सर्व्वदा संप्राकाशयेत्॥

His Energy, being the universal form of all the world, is called *Máyá*, for so does the Lord the best of males and endowed will illusion cause it to revolve. That *Sakti*, of which the essence is illusion, is omniform and eternal, and constantly displays the universal shape of *Mahésa*.

* योगेनात्मा सृष्टि विधौ द्विधा बभूवसः
पुमाञ्चं दक्षिणार्द्धाङ्गो वामार्द्धा प्रकृतिः स्मृता।

He, by the power of YOGA, became himself in the act of creation two-fold, the right half was the male, the left was called *Prakriti*.

divine nature, beheld all one universal blank, and contemplating creation with his mental vision, he began to create all things by his own will, being united with his will, which became manifest as MÚLA PRAKRITI.* The original PRAKRITI first assumed five forms †—DURGÁ the bride, *Sakti*, and *Máyá*, of SIVA, LAKSHMÍ the bride, *Sakti* and *Máyá* of VISHNU; SARASWATÍ the same of BRAHMA, or in the *Brahma Vaivartta Purána*, of HARI; whilst the next, SÁVITRI is the bride of BRAHMÁ. The fifth division of the original *Prakriti*, was RÁDHÁ, the favourite of the youthful KRISHNA, and unquestionably a modern intruder into the Hindú Pantheon.

Besides these more important manifestations of the female principle, the whole body of goddesses and nymphs of every order, are said to have sprung from the same source, and indeed every creature, whether human or brutal, of the female sex, is referred to the same principle, whilst the origin of males is ascribed to the primitive *Purusha*, or male. In every creation of the universe, it is said the MÚLA PRAKRITI assumes the different gradations of *Ansarúpiní*, *Kalárúpini*, and *Kalánsarúpini*,‡ or mani-

---

* स्वेच्छामयस्य च्छयाच श्रीकृष्णस्य सिसृक्षया ।
साविर्बभूव सहसा मूलप्रकृतिरीश्वरी ॥

From the wish which was the creative impulse of *Sri Krishna*, endowed with his will, she, *Múla Prakriti*, the Supreme, became manifest.

† तदाज्ञया पञ्चविधा सृष्टि कर्म्मविभेदतः ।

And she (the *Múla Prakriti*,) became in the act of creation five-fold by the will of the Supreme.

‡ अंशरूपा कल रूपा कलांशांशसमभवा ।
प्रकृतेः प्रतिविश्वेषु देवश्च दिव्ययोगिनः ॥

In every creation of the universe the *Devi*, through divine *Yoga*, assumes different forms, and becomes *Ansarúpá*, *Kalárúpá*, and *Kalánsarúpá*, or *Ansánsarúpá*.

fests herself in portions, parts, and portions of parts, and further subdivisions. The chief *Ansas* are, besides the five already enumerated, GANGÁ, TULASI, MANÁSÁ, SASHTHI, or DEVASENÁ, MANGALÁCHANDIKÁ, and KÁLÍ; the principal *Kalás* are SWÁHÁ, SWADHÁ, DAKSHINÁ, SWASTI, PUSHTI, TUSHTI, and others, most of which are allegorical personifications, as *Dhriti*, Fortitude, *Pratishthá*, Fame, and *Adharma*, Wickedness, the bride of *Mrityu*, or Death. ADITI, the mother of the Gods, and DITI, the mother of the Demons, are also *Kalás* of PRAKRITI. The list includes all the secondary goddesses. The *Kalánsás* and *Ansánsas*, or sub-divisions of the more important manifestations, are all womankind, who are distinguished as good, middling, or bad, according as they derive their being, from the parts of their great original in which the *Satya*, *Rajas*, and *Tama Guna*, or property of goodness, passion, and vice predominates. At the same time as manifestations of the great cause of all they are entitled to respect, and even to veneration: whoever, says the *Brahma Vaivartta Purána*, offends or insults a female, incurs the wrath of PRAKRITI, whilst he who propitiates a female, particularly the youthful daughter of a *Brahman*, with clothes, ornaments and perfumes, offers worship to PRAKRITI herself. It is in the spirit of this last doctrine that one of the principal rites of the *Sáktas*, is the actual worship of the daughter or wife of a *Brahman*, and leads with one branch of the sect at least to the introduction of gross impurities. But besides this derivation of PRAKRITI, or SAKTI, from the Supreme, and the secondary origin of all female nature from her, those who adopt her as their especial divinity, employ the language invariably addressed towards the preferential object of worship in every sect, and contemplate her as comprising all existence in her essence. Thus she is not only declared to be one with the male deity, of whose energy some one of her manifestations is the type, as DEVI with SIVA, and LAK-

SHMI with VISHNU; but it is said, that she is equally in all things, and that all things are in her, and that besides her, there is nothing.*

Although the adoration of PRAKRITI or SAKTI is, to a certain extent, authorised by the *Puránas*, particularly the *Brahma Vaivartta*, the *Skánda*, and the *Káliká*, yet the principal rites and formulæ are derived from an independant series of works, known by the collective term of *Tantras*. These are infinitely numerous, and in some instances of great extent; they always assume the form of a dialogue between SIVA and his bride, in one of her many forms, but mostly as UMÁ and PÁRVATI, in which the goddess questions the god as to the mode of performing various ceremonies, and the prayers and incantations to be used in them. These he explains at length, and under solemn cautions that they involve a great mystery, on no account whatever to be divulged to the profane.

The followers of the *Tantras* profess to consider them as a fifth *Veda*, and attribute to them equal antiquity, and superior authority.† The

---

* Thus in the *Kási Khanda*—

सर्व्वमन्त्रमयीत्वं ब्रह्माद्यास्त्वत्समुद्भवाः ।
चतुर्वर्गात्मकीत्वंवै चतुर्वर्गफलोदया ॥
त्वत्तः सर्व्वमिदंविश्वं त्वयिसर्व्वं जगन्निधे ।
यद्दृश्यं यददृश्यञ्च स्थूल सूक्ष्म स्वरूपतः।
यत्तत्त्वं शक्तिरूपेण किञ्चिन्नत्वदृतेक्वचित्

Thou art predicated in every prayer—*Brahma* and the rest are all born from thee. Thou art one with the four objects of life, and from thee they come to fruit. From thee this whole universe proceeds, and in thee, asylum of the world, all is, whether visible or invisible, gross or subtle in its nature: what is, thou art in the *Sakti* form, and except thee nothing has ever been.

† Thus, in the *Siva Tantra*, SIVA is made to say—

ममपञ्चमुखेभ्यश्चमञ्चाम्नायाविनिर्गताः ।
पूर्व्वञ्च पश्चिमञ्चैव दक्षिणञ्चोत्तरस्तथा ॥
ऊर्द्ध्वाम्नायश्च पञ्चैते मोक्षमार्गाः प्रकीर्त्तिताः ।
आम्नाया बहवः सन्तिऊर्द्ध्वाम्नायेन नोसमाः ॥

observances they prescribe have, indeed, in Bengal, almost superceded the original ritual. The question of their date is involved in considerable obscurity. From the practices described in some of the *Puránas*, particularly that of the *Dikshá* or rite of initiation, in the *Agni Purána*, from the specification of formulæ, comprising the mystical monosyllables of the *Tantras* in that and other similar compilations, and from the citation of some of them by name in different *Pauránic* works,* we must conclude that some of the *Tantras* are prior to those authorities. But the date of the *Puránas* themselves is far from determined, and whilst some parts of them may be of considerable antiquity, other portions of most, if not of all, are undoubtedly subsequent to the tenth century of the Christian era. It is not unlikely, however, that several of the *Tantras* are of earlier composition, especially as we find the system they inculcate, included by ANANDAGIRI, in his life of SANKARÁCHÁRYA, amongst the heterodoxies which that Legislator succeeded in confuting. On the other hand, there appears no indication of *Tántrika* notions in the *Mahábhárat*, and the

---

"The five Scriptures issued from my five mouths, and were the east, west, south, north, and upper. These five are known as the paths to final liberation. There are many Scriptures, but none are equal to the Upper Scripture." *Kullúka Bhatta*, commenting on the first verse of the second chapter of *Menu*, says, the *Sruti* is two-fold—*Vaidika* and *Tántrika*;

श्रुतिश्च द्विविधा वैदिकी तान्त्रिकी च ॥

* As in the *Kúrma Purána*, the *Kapála*, *Bhairava*, *Váma* and *Yámala*, and the *Pancharátra* in the *Varáha*: we have also a number mentioned in the *Sankara Vijayas*, of both *Anandagiri* and *Mádhava*, as the *Siva Gítá*, *Siva Sanhitá*, *Rúdra Yámala*, and *Siva Rahasya*. It is also said in *Anandagiri's* work, that the *Brahmanas* were cursed by *Gáyatri*, to become *Tántrikas* in the *Kali* age.

वेदोक्त कर्म्महीनाश्च तान्त्रिकाचार तत्पराः।
यूयं कलौ भवन्त्वेव मिति तानाहुसारुषा ॥

"She being angry said to them, in the *Kali* age, after abandoning the *Veda* ritual, become followers of the *Tántrika* observances.

name of *Tantra*, in the sense of a religious text book, does not occur in the vocabulary of AMERA SINEA. It may therefore be inferred, that the system originated at some period in the early centuries of Christianity, being founded on the previous worship of the female principle, and the practices of the *Yoga* with the *Mantras*, or mystical formulæ of the *Vedas*. It is equally certain that the observances of the *Tantras* have been carried to more exceptionable extremes in comparatively modern times, and that many of the works themselves are of recent composition. They appear also to have been written chiefly in Bengal and the Eastern districts, many of them being unknown in the West and South of India, and the rites they teach having there failed to set aside the ceremonies of the *Vedas*, although they are not without an important influence upon the belief and the practices of the people.

The *Tantras* are too numerous to admit in this place of their specification, but the principal are the *Syáma Rahasya*, *Rúdra Yámala*, *Mantra Mahodadhi*, *Sáreda Tilaka*, and *Káliká Tantra*, whilst the *Kulachurámani*, *Kulârnava*, and similar works, are the chief authorities of one portion of the *Sáktas*, the sect being divided into two leading branches, the *Dakshinácharis* and *Vámácharis*, or followers of the right hand and left hand ritual.

DAKSHINAS, OR BHAKTAS.

When the worship of any goddess is performed in a public manner, and agreeably to the *Vaidik* or *Pauránik* ritual,* it does not comprehend

* The peculiarities of this sect are described in the *Dakshináchara Tantra Raja*, a modern summary of the system by *Kásináth*: according to this authority—

दक्षिणाचार तन्त्रोक्तं कर्म्मतच्छुद्धो वैदिकम्।

The ritual declared in the *Tantras* of the *Dakshinácháras*, is pure, and conformable to the *Vedas*."

the impure practices which are attributed to a different division of the adorers of SAKTI, and which are particularly prescribed to the followers of this system. In this form it is termed the *Dakshina*, or right hand form of worship.* The only observance that can be supposed to form an exception to the general character of this mode is the *Bali*, an offering of blood, in which rite a number of helpless animals, usually kids, are annually decapitated. In some cases, life is offered without shedding blood; when the more barbarous practice is adopted of pummelling with the fists the poor animal to death: at other times blood only is offered without injury to life. These practices, however, are not considered as orthodox, and approach rather to the ritual of the *Vámácharis*,† the more pure *Bali*, consisting of edible grain, with milk and sugar. Animal

---

* वामागमो मदुक्तोयं सर्व्वं शूद्रपरःप्रिये।
ब्राह्मणो मदिरादाना द्ब्राह्मण्येन वियुज्यते॥
नकर्त्तव्यं न कर्त्तव्यं न कर्त्तव्यं कदाचन।
इदंतु साहसं देवि न कर्त्तव्यं कदाचन॥

The *Váma* ritual, although declared by me, was intended for *Súdras* only. A *Brahman*, from receiving spirituous liquor, forfeits his Brahmanical character—let it not be done—let it not ever be done. Goddess, it is brutality, never let it be practised.

† द्विविधबलिराख्यातो राजसः सात्विको बुधैः।
राजसो मांसरक्तादयं पलत्रय समन्वितः॥
मुद्ग पायस संयुक्तो मधुरत्रय लोलितः।
ब्राह्मणो नित्तःशुद्धः सात्विकं बलिमाहरेत्॥

The *Bali* is of two kinds, *Rájasa* and *Sátwika*; the first consists of meat, and includes the three kinds of flesh; the second of pulse and rice-milk, with the three sweet articles, (ghee, honey, and sugar,) let the *Brahman*, always pure, offer only the *Sátwika Bali*.

The *Brahmavaivartta* also observes—"The animal sacrifices, it is true, gratify DURGÁ; but they, at the same time, subject the sacrificer to the sin which attaches to the destroyer of animal life. It is declared by the *Vedas*, that he who slays an animal, is hereafter slain by the slain. "*Brahma Vaivartta Purána*."

victims are also offered to DEVÍ, in her terrific forms only, as KÁLÍ or DURGÁ. The worship is almost confined to a few districts; and, perhaps, is carried to no great extent.

Although any of the goddesses may be objects of the *Sákta* worship, and the term *Sakti* comprehends them all, yet the homage of the *Sáktas* is almost restricted to the wife of SIVA, and to SIVA himself, as identified with his consort.* The sect is, in fact, a ramification from the common *Saiva* stock, and is referred to SIVA himself as its institutor. In the *Tantras*, as has been noticed, he appears as its professor, expounding to PÁRVATÍ the mantras, tenets, and observances of the *Sákta* worship, whether of the right or left hand description.

The worship of DEVÍ, thus naturally resulting from the works on which the *Sákta* doctrines are founded, is one of considerable antiquity and popularity. Laying aside all uncertain and fabulous testimony, the

---

* शिवशक्ति मयंरूपं सम्पूज्यं साधकोत्तमैः ।
यस्तुसम्पूजयेच्छक्तिं शिवंनैव प्रपूजयेत् ।
सएव पातकीरोगी मान्त्रिको दुर्गतिर्भवेत् ।

The joint form of SIVA and SAKTI is to be worshipped by the virtuous. Whoever adores SAKTI, and offers not adoration to SIVA, that *Mántrika* is diseased: he is a sinner, and hell will be his portion." For it appears that some of the *Sáktas* elevate the SAKTI above the SAKTIMÁN, or deity: thus the *Vámis*, in the *Sankara Vijaya*, say:

शक्तिः शिवस्य बलकारिणी तयाविनातस्य तृणचलन क्रियायामसमर्थत्वात् अतः शक्तिरेव शिवस्य कारणं ।

"SAKTI gives strength to SIVA, without her he could not stir a straw. She is, therefore, the cause of SIVA.

नित्यपदार्थयोर्नेध्ये शक्तेरधिकत्वं

And again; of the two objects which are eternal, the greater is the SAKTI.

adoration of *Vindhya Vásini*, near *Mirzapur*,* has existed for more than seven centuries, and that of *Jwálamukhí*, at *Nagarkot*, very early attracted Mohammedan persecution. † These places still retain their reputation, and are the objects of pilgrimage to devout Hindus. On the eighth of the dark fortnight of *Chaitra* and *Kártik* in particular, a numerous assemblage of pilgrims takes place at them.

The adoration of KÁLÍ, or DURGÁ, is, however, particularly prevalent in Bengal, and is cultivated with practices scarcely known in most other provinces. Her great festival, the *Dasahara*, is, in the West of India, marked by no particular honors, whilst its celebration in Bengal occupies ten days of prodigal expenditure. This festival, the *Durgá Pújá*, is now well known to Europeans, as is the extensive and popular establishment near Calcutta, the temple of KÁLÍ, at *Kálí Ghát*. The rites observed in that place, and at the *Durgá Pújá*, however, almost place the *Bengali Sáktas* amongst the *Vámácharis*, notwithstanding the rank assigned them in the *Dakshináchári Tantrarája*, which classes the *Gauras* with the *Keralas* and *Kashmirians*, as the three principal divisions of the purer worshippers of SÁKTI.

VÁMÍS, OR VÁMÁCHARÍS.

The *Vámís* mean the left hand worshippers, or those who adopt a ritual contrary to that which is usual, and to what indeed they dare

* It is frequently mentioned in the *Vrihat Kathá*, the age of which work is ascertained to be about seven centuries. *Nagarkot* was taken by FIROZ the 3d, in 1360, (Dow 2. 55,) at which time the goddess *Jwálámukhí* was then worshipped there.

† For a full account of both, the work of Mr. WARD may be advantageously consulted—II. 89 to 96, and 125 to 131.

publicly avow.* They worship DEVÍ, the *Sakti* of SIVA, but all the goddesses, as LAKSHMÍ, SARASWATÍ, the *Mátris*, the *Náyikas*, the *Yoginis*, and even the fiend-like *Dákinis* and *Sákinis*, are admitted to a share of homage. With them, as well as with the preceding sect, SIVA is also an object of veneration, especially in the form of BHAIRAVA, with which modification of the deity it is the object of the worshipper to identify himself.†

The worship of the *Vámácharis* is derived from a portion of the *Tantras*: it resolves itself into various subjects, apparently into different sects, of which that of the *Kaula*, or *Kulína*, is declared to be pre-eminent.‡

---

* The following verse is from the *Syáma Rahasya*—

अन्तश्शाक्ताः बहिश्शैवाः सभायां वैष्णवाः मताः ।
नानारूपधराः कौलाः विचरन्ति महीतले ॥

"Inwardly *Sáktas*, outwardly *Saivas*, or in society nominally *Vaishnavas*, the *Kaulas* assuming various forms, traverse the earth."

† भैरवोहं मितिज्ञात्वा सर्व्वज्ञोहंगुणान्वितः ।
इतिसञ्चिन्त्य योगीन्द्रः कुलपूजां समाचरेत् ॥

I am *Bhairava*, I am the omniscient, endowed with qualities. Having thus meditated, let the devotee proceed to the *Kula* worship.—*Syáma Rahasya.*

‡ सर्व्वभ्यश्चोत्तमावेदा वेदेभ्यो वैष्णवपरं ।
वैष्णवादुत्तमंशैवं शैवाद्दक्षिणमुत्तमं ॥
दक्षिणादुत्तमं वामं वामात्सिद्धान्त मुत्तमं
सिद्धान्तादुत्तमं कौलं कौलात्परतरं नहि ॥

"The *Vedas* are pre-eminent over all works, the *Vaishnava* sect excels the *Vedas*, the *Saiva* sect is preferable to that of VISHNU, and the right hand SÁKTA to that of SIVA—the left hand is better than the right hand division, and the *Siddhánta* is better still—the *Kaula* is better than the *Siddhánta*, and there is none better than it."—*Kulárnava.* The words *Kaula* and *Kulína* are both derivatives from *Kula*, family; and the latter is especially applied to imply of good, or high family: these terms have been adopted to signify, that those who follow this doctrine are not only of one, but of an exalted race.

The object of the worship is, by the reverence of DEVÍ or SAKTI, who is one with SIVA, to obtain supernatural powers in this life, and to be identified after death with SIVA and SAKTI.

According to the immediate object of the worshipper, is the particular form of worship; but all the forms require the use of some or all of the five *Makáras*,* *Mánsa*, *Matsya*, *Madya*, *Maithuna*, and *Mudrá*, flesh, fish, wine, women, and certain mystical gesticulations. Suitable *Mantras* are also indispensable, according to the end proposed, consisting of various unmeaning monosyllable combinations of letters of great imaginary efficacy.†

---

* They are thus enumerated in the *Syáma Rahasya*:

मद्यंमांसञ्च मत्स्यञ्च मुद्रामैथुन मेवच।
मकार पञ्चकञ्चैव महापातक नाशनम्॥

Wine, flesh, fish, *Mudrá*, and *Maithuna*, are the five-fold *Makára*, which takes away all sin.

† Many specimens might be given, but one will be here sufficient. It is the combination H and S as ह्स, and is one of the very few to which any meaning is attempted to be given: it is called the *Prásáda Mantra*, and its virtues and import are thus described in the *Kulárnava*.

श्रीप्रासादपरामन्त्रमूर्ध्वाम्नाय प्रतिष्ठितं।
आवयोःपरमाकारं यावेत्तिसःशिवःस्वयं॥
शिवादि क्रिमिपर्य्यन्तं प्राणिनां प्राण वर्त्मनां।
निश्वासोच्छ्वास रूपेण मन्त्रोयं वर्त्ततेप्रिये॥

"He who knows the excellent *Frasáda Mantra*, that was promulgated by the fifth *Veda*, (the *Tantras*) and which is the supreme form of us both, he is himself SIVA: this *Mantra* is present in all beings that breathe from SIVA, to a worm, and exists in states of expiration and inspiration." The letter H is the expirated, and S the inspirated letter, and as these two acts constitute life, the *Mantra* they express is the same with life: the animated world would not have been formed without it, and exists but as long as it exists, and it is an integral part of the universe, without being distinct from it, as the fragrance of flowers, and sweetness of sugar, oil of Sesamum seed, and SAKTI of SIVA. He who knows it needs no other knowledge—he who repeats it need practice no other act of adoration. The authority quoted contains a great deal more to the same purpose.

Where the object of the ceremony is to acquire an interview with and controul over impure spirits, a dead body is necessary. The adept is also to be alone, at midnight, in a cemetery or place where bodies are burnt or buried, or criminals executed: seated on the corpse, he is to perform the usual offerings, and if he does so without fear, the *Bhútas*, the *Yoginis*, and other male or female goblins, become his slaves.

In this, and many of the observances practiced, solitude is enjoined; but all the principal ceremonies comprehend the worship of SAKTI, and require for that purpose the presence of a female, as the living representative and the type of the goddess. This worship is mostly celebrated in a mixed society, the men of which represent *Bhairavas* or *Víras*, and the women *Bhairavis* and *Náyikás*. The SAKTI is personated by a naked female, to whom meat and wine are offered, and then distributed amongst the assistants, the recitation of various *Mantras* and texts, and the performance of the *Mudrá*, or gesticulations with the fingers, accompanying the different stages of the ceremony, and it is terminated with the most scandalous orgies amongst the votaries.* The ceremony is entitled the *Sri Chakra*, or *Púrnábhisheka*, the Ring, or Full Initiation.

---

* It might have been sufficient to have given this general statement, or even to have referred to the similar but fuller account of Mr. WARD: his information was, however, merely oral, and may therefore be regarded as unsatisfactory; and as it seems to be necessary to show that the charge is not altogether unfounded, I shall subjoin the leading rites of the *Sákti Sodhana*, or *Sri Chakra*, as they are prescribed in the *Devi Rahasya*, a section of the *Rudra Yámala*.

SAKTI SODHANA.

The object of the ceremony should be either—

नटीकपालिनीवेश्यारजकीनापिताङ्गना ।
ब्राह्मणीशूद्रकन्याचतथागोपालकन्यका ॥
मालाकारस्यकन्यापि नवकन्याप्रकीर्त्तिताः ।
एतासुकाञ्चिदानीयपूजयेन्कौलिकः

The occurrence of these impurities is certainly countenanced by the texts, which the sects regard as authorities, and by a very general belief of their occurrence. The members of the sect are enjoined secrecy, which, indeed, it might be supposed they would observe on their own account, and, consequently, will not acknowledge their participation in such scenes. They will not, indeed, confess that they are of the *Sákta* sect, although their reserve in this respect is said, latterly, to be much relaxed. It is contrary, however, to all knowledge of the human character, to admit the possibility of these transactions in their fullest extent; and, although the worship of the SAKTI, according to the above outline, may be sometimes performed, yet there can be little doubt of its being practised but seldom, and then in solitude and secrecy. In truth, few of the ceremonies, there is reason to believe, are ever observed; and, although the *Chakra*

"A dancing girl, a female devotee, a harlot, a washerwoman, or barber's wife, a female of the *Brahmanical* or *Sudra* tribe, a flower girl, or a milk maid." It is to be performed at midnight, with a party of eight, nine, or eleven couple, as the *Bhairavas* and *Bhairavis*.

महानिशायामानीयनवकन्याश्चभैरवान् ।
एकादशनवाष्टौवाकौलिकःकौलिकेश्वरि ।
शोधयेन्नवभिर्मन्त्रैःपूजयेत्कौलिकोत्तमः ।

Appropriate Mantras are to be used, according to the description of the person selected for the *Sakti*, who is then to be worshipped, according to prescribed form: she is placed disrobed, but richly ornamented—on the left of a circle *(Chakra)* described for the purpose, with various *Mantras* and gesticulations, and is to be rendered pure by the repetition of different formulas.

तदीयंमन्त्रमालिख्यतस्मिन्नामेवपूजयेत्
श्रीचक्रेस्थापयेद्वामेकन्यांभैरववल्लभां ॥
मुक्तकेशींवीतलज्जांसर्व्वाभरणभूषितां ।
आनन्दलीनहृदयांसौन्दर्य्यातिमनोहरां ॥
शोधयेत्शुद्धिमन्त्रेणसुरानन्दामृताम्बुभिः ।

Being finally sprinkled over with wine, the act being sanctified by the peculiar *Mantra*.

मन्त्रेणानेनदेवेशिकामिनीमभिषिञ्चयेत्

is said to be not uncommon, and by some of the zealous *Sáktas*, it is scarcely concealed, it is usually nothing more than a convivial party, consisting of the members of a single family, or at which men only are assembled, and the company are glad to eat flesh and drink spirits,* under the

---

The *Sakti* is now purified, but if not previously initiated, she is to be further made an adept by the communication of the radical *Mantra*, whispered thrice in her ear, when the object of the ceremony is complete.

एवं शोधनमन्त्रास्तेवर्णिताः पृथक्मया।
योनौजपेत्कुमारीणां कौलिकःकरमालया॥
सञ्चप्यदक्षकर्णेच मूलमन्त्रंत्रिरुच्चरेत्
अदीक्षितापिदेवेशिदीक्षितैवभवेत्तदा॥
दीक्षितां शोधितोवीरोभवेत्सर्व्वार्थसिद्धये।

The finale is what might be anticipated, but accompanied throughout with *Mantras* and forms of meditation, suggesting notions very foreign to the scene.

अनन्दतर्पितां कान्तां वीरः स्वानन्दविग्रह।
रतेनतर्प्पयेत्तत्रश्रीचक्रेवीरसंसदि॥
पठन्प्रणवमुद्धृत्यमन्त्र राजं कुलेश्वरि।
धर्म्माधर्म्महविर्द्दीप्तेस्वात्माऽग्नौमनसासुचा॥
सुषुम्णा वर्त्मनानित्यमचद्वृत्तीजुहोम्यहं।
स्वाहान्तं मन्त्रमुच्चार्य्यजपमूलं स्मरन्परं॥
कुर्य्यान्निधुवनंमन्त्री मन्त्रसिद्धिमवाप्नुयात्।
रतान्तेसंजपेन्मूलं पठेन्मन्त्रमिदंपुनः॥
तारद्वयान्तरगतं परमानन्दकारणं॥
ॐ प्रकाशाकाशहस्ताभ्यामवलंब्योन्मनीसुचा।
धर्म्माधर्म्मकलास्नेहपूर्णेव वह्नौजुहोम्यहं।
स्वाहान्तेवायुमन्त्रेण शुक्रमादायपार्व्वति॥
श्रीचक्रेतर्प्पयेद्देवितत: सिद्धिमवाप्नुयात्।
सम्पूज्यकान्तां संतर्प्यस्तुत्वानत्वापरस्परं॥
संहारं सुद्यासन्त्रीशक्तिवीरान् विसर्ज्जयेत्।

* The zeal that is prescribed might suit some more civilized associations—

पीत्वापीत्वापुनःपीत्वायावल्लुठतिभूतले।
उत्थायच पुनःपीत्वापुनर्जन्म न विद्यते

pretence of a religious observance. In justice to the doctrines of the sect, it is to be observed, that these practices, if instituted merely for sensual gratification, are held to be as illicit and reprehensible, as in any other branch of the Hindu faith.*

Let him pledge the wine cup again and again,
Till he measures his length on the ground.
Let him rise and once more the goblet drain,
And with freedom for aye, from a life of pain,
Shall the glorious feat be crowned.

* The *Kulárnava* has the following and many similar passages: they occur constantly in other *Tantras*.

वहव.कौलिकंधर्म्मं मिथ्याज्ञान विडम्बकाः।
स्ववुद्धा कलयन्तीत्थं पारम्पर्य्यविवर्ज्जिताः॥
मद्यपानेन मनुजा यदिसिद्धिंलभन्तितत्।
मद्यपानरताःसर्व्वेसिद्धिंयान्तिममीहितां॥
मांसभक्षणमात्रेणयदि पुण्यगतिर्भवेत्।
लोकेमांसाशिनःसर्व्वेपुण्यवन्तोभवन्तिकिम्॥
स्त्रीसम्भोगेनदेवेशियदि मोक्षं व्रजन्तितत्।
सर्व्वेपिजन्तवोलोके मुक्ताःस्युःस्त्रीनिषेवनात्॥
कुलमार्गयुतोदेविनसयानिन्दितःक्वचित्।
आचाररहितायचनिन्दितास्तेनचेतरे॥
कुलद्रव्याणिसेव्यन्तेयेऽन्यदर्शनमाश्रिताः।
तदङ्गरोमप्रमाणं पुनर्जन्मभविष्यति॥

"Many false pretenders to knowledge, and who have not been duly initiated, pretend to practise the *Kaula* rites; but if perfection be obtained by drinking wine, independantly of my commands, then every drunkard is a saint: if virtue consist in eating flesh, then every carnivorous animal in the world is virtuous: if eternal happiness be derived from sexual intercourse, then all beings will be entitled to it: a follower of the *Kula* doctrine is blameless in my sight, if he reproves those of other creeds who quit their established observances—those of other sects who use the articles of the *Kaula* worship, shall be condemned to repeated generations as numerous as the hairs of the body."—In fact, the texts of *Menu* are taken as authorities for the penance to be performed for the crimes of touching, smelling, looking at, or tasting the forbidden articles, except upon religious occasions, and when they are consecrated by the appropriate texts.

It is only to be added, that if the promulgators of these doctrines were sincere, which is far from impossible, they must have been filled with a strange phrenzy, and have been strangely ignorant of human nature.

The followers are considered as very numerous, especially amongst the Brahmanical tribe: all classes are however admissible, and are equal and alike at the ceremonies of the sect. In the world* they resume their characteristic distinctions, and wear the sectarial marks, and usually adopt the outward worship of any other division, whether orthodoxical or heretical. When they assume particular insignia, they are a semi-circular line or lines on the forehead, of red saunders or vermillion, or a red streak up the middle of the forehead, with a circular spot of red at the root of the nose. They use a rosary of *Rudráksha* seeds, or of coral beads, but of no greater length than may be concealed in the hand, or they keep it in a small purse, or a bag of red cloth. In worshipping, they wear a piece of red silk round the loins, and decorate themselves with garlands of crimson flowers.

KANCHELIYAS.

This is a sect of which the existence may be questioned, notwithstanding the assertion that it is not uncommon in the South of India, the worship is that of SAKTI, and the practices are similar to those of the *Kaulas*, or *Vámácharis*. It is said to be distinguished by one peculiar rite, the object of which is to confound all the ties of female alliance, and to enforce not only a community of women amongst the votaries, but disregard even to natural restraints. On occasions of worship, the female

---

* प्रवृत्तेभैरवीतन्त्रे सर्व्वे वर्णा द्विजोत्तमाः।
निवृत्तेभैरवीतन्त्रे सर्व्वे वर्णाः पृथक्पृथक्॥

"Whilst the *Bhairavi Tantra* is proceeding, all casts are *Brahmans*—when it is concluded, they are again distinct." *Syáma Rahasya*. According to WARD, such of them as avow their creed, leading at the same time a mendicant life, are termed *Vyaktávadhutas*, or they who are openly free from restraints: those who conceal their creed and observe its practices in privacy, are termed *Guptávadhútas*, the liberated in secret. II 256.

votaries are said to deposit their upper vests in a box in charge of the *Guru*. At the close of the usual rites, the male worshippers take each a vest from the box, and the female to whom the garment appertains, be she ever so nearly of kin to him, is the partner for the time of his licentious pleasures.*

KERÁRI.

The *Kerári* is the worshipper of DEVI, in her terrific forms, and is the representative of the *Aghora Ghanta* and *Kápálika*,† who, as lately only as seven or eight centuries ago, there is reason to suppose sacrificed human victims to KÁLÍ, CHAMUNDÁ, CHHINNAMASTAKÁ, and other hideous personifications of the *Sakti* of SIVA. The attempt to offer human beings in the present day, is not only contrary to every known

---

* This sect appears in the *Sankara Vijaya* as the *Uchchishtha Ganapati*, or *Hairamba* sect, who declare that all men and all women are of one caste, and that their intercourse is free from fault.

पुरुषाणां सर्व्वजातिकानामेक जातिवदित्येको धर्म्मः स्त्रीणाम्सर्व्वजातिकानामेकजाति वदित्येको धर्म्मः। तासाञ्चतेषाञ्चसंयोगे वियोगेच दोषाभावः।

The same sort of story is told, but apparently with great injustice of the Mohammedan *Byabahâris* or *Borahs*, and of a less known Mohammedan sect, the *Cheraghkesh*: something of the same kind was imputed to the early Christians by their adversaries.

† The following description of the *Kápálika*, is from the *Sankara Vijaya* of *Anandagiri*.

चितिभस्मपूर्णकलेवरः नरकपालमालावृतगलः फालदेशरचित कज्जलरेखः सकल केशरचितजटापारिः व्याघ्रचर्म्मरचित कटिसूत्र कौपीनः कपालशोभितवामकरः महनाद घण्टाधृतदक्षिणकरः शम्भो भैरव श्रीकालीशइति मुहु मुहु र्जपन्

His body is smeared with ashes from a funeral pile, around his neck hangs a string of human skulls, his forehead is streaked with a black line, his hair is wove into the matted braid, his loins are clothed with a tiger's skin, a hollow skull is in his left hand, (for a cup) and in his right he carries a bell, which he rings incessantly, exclaiming aloud, Ho, *Sambhu*, *Bhairava*—ho lord of *Kali*.

ritual, but it would be attended with too much peril to be practised, and, consequently, it cannot be believed that this sect is in existence: the only votaries, if any there be, consisting of the miscreants who, more for pay than devotion, inflict upon themselves bodily tortures, and pierce their flesh with hooks or spits, run sharp pointed instruments through their tongues and cheeks, recline upon beds of spikes, or gash themselves with knives, all which practices are occasionally met with throughout India, and have become familiar to Europeans from the excess to which they are carried in Bengal at the *Charak Pújá*, a festival which, as a public religious observance, is unknown any where else, and which is not directed nor countenanced by any of the authorities of the Hindus, not even by the *Tantras*.

MISCELLANEOUS SECTS.

The sects that have been described are those of the regular system, and particularly of what may be called Brahmanical Hinduism, emanating, more or less directly, from the doctrines of the original creed. Besides these, there are a number which it is not so easy to class, although they are mostly referable to a common source, and partake, in many respects, of the same notions, especially of those of a *Vaishnava* and *Vedanta* tendency. They exist in various degrees of popularity, and date from various periods, and in most instances, owe their institution to enthusiastic or contemplative individuals, whose biography is yet preserved consistently enough by tradition.

This is not the case, however, with the first two on the list—the *Saurapátas* and *Ganapátas*: these are usually, indeed, ranked with the preceding divisions, and make, with the *Vaishnavas*, *Saivas*, and *Sáktas*, the five orthodox divisions of the Hindus: they are of limited extent and total insignificance.

SAURAPATAS, OR SAURAS.

The *Saurapátas* are those who worship SURYAPATI, the Sun-god only; there are a few of them, but very few, and they scarcely differ from the rest of the Hindus in their general observances. The *Tilaka*, or frontal mark, is made in a particular manner, with red sandal, and the necklace should be of crystal: these are their chief peculiarities: besides which they eat one meal without salt on every Sunday, and each *Sankránti*, or the sun's entrance into a sign of the Zodiac: they cannot eat either until they have beheld the sun, so that it is fortunate that they inhabit his native regions.

GANAPATYAS.

These are worshippers of GANESA, or GANAPATI, and can scarcely be considered as a distinct sect: all the Hindus, in fact, worship this deity, as the obviator of difficulties and impediments, and never commence any work, or set off on a journey, without invoking his protection. Some, however, pay him more particular devotion than the rest, and these are the only persons to whom the classification may be considered applicable. GANESA, however, it is believed, is never exclusively venerated, and the worship, when it is paid, is addressed to some of his forms, particularly those of *Baktratunda* and *Dhundhiráj*.

NANAK SHAHIS.

A sect of much greater importance is that which originated with NÁNAK SHAH, and which, from bearing at first only a religious character, came, in time, to be a political and national distinction, through the influence of Mohammedán persecution and individual ambition. The enterprising

policy of GOVIND SINH, and the bigotry of AURANGZEB, converted the peaceful tenets of NÁNAK into a military code, and his speculative disciples into the warlike nation of the *Sikhs*. It is not, however, in their political capacity that we are now to consider them, but as the professors of a peculiar form of faith, which branches into various sub-divisions, and is by no means restricted to the *Punjab*. At the same time it is unnecessary to detail the tenets and practices of the *Sikhs*, as that has been already performed in a full and satisfactory manner.

The *Sikhs*, or *Nának Shahis*, are classed under seven distinctions, all recognising *Nának* as their primitive instructor, and all professing to follow his doctrines, but separated from each other by variations of practice, or by a distinct and peculiar teacher. Of these the first is the sect of the *Udásis*.

UDÁSIS.

These may be regarded as the genuine disciples of *Nának*, professing, as the name denotes, indifference to wordly vicissitudes. They are purely religious characters, devoting themselves to prayer and meditation, and usually collected in *Sangats*, colleges or convents ; they also travel about to places of pilgrimage, generally in parties of some strength. Individuals of them are to be met with in most of the chief cities of Hindustan, living under the patronage of some man of rank or property ; but in all situations they profess poverty, although they never solicit alms ; and although ascetics, they place no merit in wearing mean garments or dispensing altogether with clothes. On the contrary, they are, in general, well dressed, and, allowing the whiskers and beard to grow, are not unfrequently of a venerable and imposing appearance. Though usually practising celibacy, it does not appear to be a necessary condition amongst the *Sikhs* to be found in the Gangetic provinces : they are usually the ministrant

priests; but their office consists chiefly in reading and expounding the writings of NÁNAK and GOVIND SINH, as collected in the *Adi Granth* and *Das Padshah kí granth.* The perusal is enlivened by the chaunting, occasionally, of Hindi *Padas* and *Rekhtas*, the compositions of KABÍR, MIRA BHAÍ, SUR DAS, and others. With that fondness for sensible objects of reverence which characterises the natives of India, the Book is also worshipped, and Rupees, flowers, and fruits, are presented by the votaries, which become, of course, the property of the officiating *Udási.* In return, the *Udási* not uncommonly adopts the presentation of the *Prásáda*, and at the close of the ceremony, sweetmeats are distributed amongst the congregation. In some of the establishments at *Benares*, the service is held in the evening after sunset, and the singing and feasting continue through a great part of the night. Many of the *Udásís* are well read in *Sanscrit*, and are able expounders of the *Vedánta* philosophy, on which the tenets of NÁNAK are mainly founded.

The *Udási* sect was established by DHARMACHAND, the grandson of NÁNAK, through whom the line of the Sage was continued, and his descendants, known by the name of *Nának Putras*, are still found in the *Punjab*, where they are treated by the *Sikhs* with especial veneration.

The doctrine taught by NÁNAK, appears to have differed but little from that of KABÍR, and to have deviated, but inconsiderably, from the *Hindu* faith in general. The whole body of poetical and mythological fiction was retained, whilst the liberation of the spirit from the delusive deceits of *Máyá*, and its purification by acts of benevolence and self-denial, so as to make it identical even in life with its divine source, were the great objects of the devotee. Associated with these notions, was great chariness of animal life, whilst with NÁNAK, as well as with KABÍR, universal tolerance was a dogma of vital importance, and both laboured to

persuade *Hindus* and *Mohammedans* that the only essential parts of their respective creeds, were common to both, and that they should discard the varieties of practical detail, or the corruptions of their teachers for the worship of one only Supreme, whether he was termed *Allah* or *Hari*. How far these doctrines are still professed by the *Nának Sháhis*, may be inferred from the translations in the eleventh volume of the Researches, to which the following may be added as part of the service solemnized at the *Sikh Sangat*, at *Benares*.

HYMN.

Thou art the Lord—to thee be praise.
All life is with thee.
Thou art my parents. I am thy child—
All happiness is derived from thy clemency.
No one knows thy end.
Highest Lord amongst the highest—
Of all that exists, Thou art the regulator.
And all that is from thee obeys thy will.
Thy movements—thy pleasure—thou only knowest.
Nának, thy slave, is a free-will offering unto thee.

The Priest then says—

Meditate on the *Saheb* of the Book, and exclaim *Wah Guru.*

The People accordingly repeat—

Wah Guru—Wah Guru ki fateh.

The Priest.

Meditating on *Rámachándra*, exclaim *Wah Guru.*

The People.

Wah Guru—Wah Guru ki fateh.

HYMN.

Love, and fix thy whole heart upon Him—
The world is bound to thee by prosperity—
No one is another's.
Whilst prosperity endures many will come,
And sit with thee and surround thee;
But in adversity they will fly,
And not one will be near thee.
The woman of the house who loves thee,
And is ever in thy bosom;
When the spirit quits the body,
Will fly with alarm from the dead.
Such is the way of the world,
With all on which we place affection;
Do thou, *Nának*, at thy last hour,
Rely alone upon *Hari*.

Priest as before.

Meditating on the Saheb of the Book, &c.

People as before.

Wah Guru, &c.

HYMN.

My holy teacher is he who teaches clemency—
The heart is awake within: who seeks may find.
Wonderful is that rosary, every bead of which is the breath.
Lying apart in its arbour, it knows what cometh to pass—
The Sage is he who is merciful;—the merciless is a butcher.
Thou wieldest the knife and regardlessly exclaimest—
What is a goat, what is a cow, what are animals?
But the *Saheb* declares that the blood of all is the same.
Saints, Prophets, and Seers, have all passed in death.
Nának, destroy not life for the preservation of the body.

That desire of life which is in the heart, do thou, brother, repress.
Nának, calling aloud, says—take refuge with *Hari*.

Priest as before.

Meditating on the *Saheb*, &c.

People as before.

Wah Guru—Wah Guru kí fateh.

GANJ BAKHSHIS.

Of this division of the *Sikhs*, no particulars, except the name, have been ascertained. This is said to have been derived from that of the founder. They are not numerous nor of any note.

RAMRAYIS.

These derive their appellation from that of RÁMA RÁYA, the son or grandson of HARI RÁYA, and their distinction from the other *Sikhs* is more of a political than religious complexion. RÁMA RÁYA disputed the succession to the Pontificate with HARI KRISHNA, the son of HARI RÁYA, and was unsuccessful. His followers, however, maintain the superiority of his pretensions, and record many miracles wrought by him in proof of his sanctity. He flourished about A. D. 1660. The *Rámráyis* are not common in Hindustan.

SUTHREH SHAHIS.

These are more often met with than either of the two preceding, and the priests are recognisable by distinguishing marks. They make a perpendicular black streak down the forehead, and carry two small black sticks about half a yard in length, which they clash together when they solicit alms. They lead a vagabond life, begging and singing songs

in the *Punjabi* and other dialects, mostly of a moral or mystic tendency. They are held in great disrepute, however, and are not unfrequently gamblers, drunkards, and thieves. They look up to TEGH BAHADER, the father of GURU GOVIND, as their founder.

GOVIND SINHIS.

These form the most important division of the *Sikh* community, being, in fact, the political association to which the name is applied, or to the *Sikh* nation generally.* Although professing to derive their national faith from *Nának*, and holding his memory in veneration, the faith they follow is widely different from the quietism of that reformer, and is wholly of a worldly and warlike spirit. GURU GOVIND devoted his followers to steel, and hence the worship of the sword, as well as its employment against both Mohammedans and Hindus. He also ordered his adherents to allow their hair and beards to grow, and to wear blue garments: he permitted them to eat all kinds of flesh, except that of kine, and he threw open his faith and cause to all casts, to whomsoever chose to abandon the institutes of *Hinduism*, or belief in the mission of Mohammed, for a fraternity of arms and life of predatory daring. It was then only that the *Sikhs* became a people, and were separated from their *Indian* countrymen in political constitution, as well as religious tenets—at the same time the *Sikhs* are still, to a certain extent, *Hindus*: they worship the deities of the *Hindus*, and celebrate all their festivals: they derive their legends and

* Described by Sir JOHN MALCOLM, in the eleventh volume of the Asiatic Researches. The *Sikh* priest to whom he allude's (page 198) as one of his authorities, was afterwards well known to me, and was an individual every way worthy of confidence. His name was *Atmá Ram*, and although advanced in years, he was full of energy and intelligence, combining with them extreme simplicity and kindliness of disposition. The old man was a most favourable and interesting specimen of the *Punjabi* nation and disciples of *Nának*. He died a few years ago in Calcutta.

literature from the same sources, and pay great veneration to the *Brahmanas*. The impress of their origin is still, therefore, strongly retained, notwithstanding their rejection of caste, and their substituting the *Das Padshah ki granth*,* the compilation of GURU GOVIND, for the *Vedas*, and *Purānas*.

NIRMALAS.

These differ but little from the *Udāsis*, and are, perhaps, still closer adherents to the doctrines of the founder, as the name imports: they profess to be free from all worldly soil or stain, and, consequently, lead a wholly religious life. They observe celibacy, and disregard their personal appearance, often going nearly naked. They are not like the *Udásis*, assembled in colleges, nor do they hold any particular form of divine service, but confine their devotion to speculative meditation on the perusal of the writings of NÁNAK, KÁBIR, and other unitarian teachers. They are always solitary, supported by their disciples or opulent individuals, and are often known as able expounders of the *Vedánta* philosophy, in which *Brahmans* do not disdain to become their scholars. They are not very numerous; but a few are almost always to be found at

* From the succession of Chiefs; GOVIND was tenth teacher in succession from *Nának*, who flourished at the close of the 17th and beginning of the 18th century.

The other standard authority of the Sikhs, the *Adi Granth* is a compilation chiefly of the works of *Nānak*, and his immediate successors, made by *Arjunmal*, a *Sikh* teacher, in the end of the 16th century. As it is usually met with, however, it comprehends the writings of many other individuals, many of whom are *Vaishnavas*. At a *Sikh Sangat*, or Chapel, in Benares, the Book, a large folio, there denominated the *Sambhu Granth*, was said to contain the contributions of the following writers:—

Nának, Nám Deo, Kábir, Sheikh Feridaddin, Dhana, Rámánand, Pipa, Sena, Jayadeva, Phandak, Sudáma, Prahlád, Dhuru, Raidas, Vibhishana, Míra Bái, Kerma Bái.

the principal seats of *Hindu* wealth and learning, and particularly at *Benares*.*

NAGAS.

The naked mendicants of the *Sikhs* are said to differ from those of the *Vaishnava* and *Saiva* sects, by abstaining from the use of arms, and following a retired and religious life. Except in going without clothes, they are not distinguishable from the *Nirmalas*.

JAINS.

A satisfactory account of the religion of the *Jains* would require a distinct dissertation, and cannot be comprised within the limits necessarily assigned to this general sketch of the *Hindu* sects. The subject is of considerable interest, as affecting a very large proportion of the population of India, and involving many important considerations connected with the history of the *Hindu* faith: an extended inquiry must, however, be left to some further opportunity; and in the meantime our attention will be confined to a few observations on the peculiar tenets and practices of the *Jain* religion, its past history, and actual condition.

---

* An interesting account of the religious service of the *Sikhs*, in their college at *Patna*, was published by Mr. WILKINS, in the first volume of the Asiatic Researches. I witnessed a similar ceremony at a *Sikh* establishment at Benares, and partook of the *Prasáda*, or sweetmeats, distributed to the assistants. Both Mr. WILKINS and Sir JOHN MALCOLM notice this eating in common, as if it were peculiar to the *Sikh* faith; but this, as elsewhere observed, is not the case. It prevails with most of the *Vaishnava* sects; but it should be remembered that it is always restricted to articles which have been previously consecrated by presentation to the object of worship, to the Idol, the sarcophagus, the sculptured foot-marks, or the book.

Previously, however, to entering upon these subjects, it may be advisable to advert briefly to what has been already done towards their elucidation, and to the materials which exist in the original languages for a complete view. The latter are of the most extensive description, whilst the labours of European writers are by no means wanting to an accurate estimate of the leading doctrines of the *Jain* faith, or to an appreciation of the state in which it exists in various parts of *Hindustan*.

The first authentic notices of the *Jains* occur in the ninth volume of the Asiatic Researches, from the pens of the late Colonel MACKENZIE, Dr. BUCHANAN, and Mr. COLEBROOKE. The two first described the *Jains* from personal acquaintance, and from their accounts, it appeared, that they existed, in considerable numbers and respectability, in Southern India, particularly in *Mysore*, and on the *Canara Coast*; that they laid claim to high antiquity, and enumerated a long series of religious teachers, and that they differed in many of their tenets and practices from the orthodox Hindus, by whom they were regarded with aversion and contempt. A further illustration of their doctrines, and a particular account of their deified teachers, was derived by Mr. COLEBROOKE from some of their standard authorities, then first made known to Europeans.

Little more was published on the subject of the *Jains* until very lately, with exception of numerous but brief and scattered notices of the sect in the *Peninsula*, in BUCHANAN'S Travels in Mysore. Some account of them also occurs in Colonel WILKS' Historical Sketch of the South of India, and in the work of the Abbè DU BOIS. Mr. WARD has an article dedicated to the *Jains*, in his account of the Hindus; and Mr. ERSKINE has briefly adverted to some of their peculiarities in his Observations on the Cave of *Elephanta*, and the remains of the *Bauddhas* in India, in the Proceedings of the *Bombay Literary Society*. It is, however, to the

Transactions of the *Royal Asiatic Society* that we are indebted for the latest and most detailed accounts, and the papers of Mr. COLEBROOKE, Major DELAMAINE, Dr. HAMILTON, Colonel FRANKLIN and Major TOD,* furnish many interesting particulars relative to the doctrines and past or present condition of the *Jains*. Some valuable illustration of the latter subject is to be found in the Calcutta Quarterly Magazine:† some historical notices obtained from the inscriptions at *Abu*, occur in the last volume of our Researches, whilst a novel and rather comprehensive view of *Jain* literature is contained in the Catalogue of Manuscripts collected by the late Colonel MACKENZIE.‡

From this latter authority, we learn that the literature peculiar to *Jainas*, comprises a number of works peculiar to the sect, the composition of their own writers, and on a variety of subjects.§ They have a series of works called *Puránas*, as the *Adi* and *Uttara Puránas*, *Chámunda Ráya*

---

* On the Philosophy of the Hindus, part IV. by Mr. COLEBROOKE, vol. 1. On the *Sráwaks*, or *Jains*, by Major DELAMAIN, vol. 1, 418. On Inscriptions in Jain Temples, in Behar, by Mr. COLEBROOKE, Dr. HAMILTON, and Colonel FRANKLIN, vol. 1, 520. On the *Sráwaks*, or *Jains*, by Dr. HAMILTON, vol. 1, 531. On the Religious Establishments in Mewar, by Major TOD, vol. 2.

† Particularly in the Journal of a Native Traveller, from Calcutta, and back again through Behar. The traveller was a learned *Jain*, in the service of Colonel MACKENZIE. There is also an interesting account of a visit to the temple of PÁRSWANÁTH, at *Samet Sikhar*.

‡ Vol. 1, page 144, &c.

§ The List comprises 44 Works—

Puranas,	7
Cheritras and Legends,	10
Ritual, Prayers, &c.	18
Medicine,	1
Grammar,	2
Arithmetic,	2
Miscellaneous,	4

Purána, and *Chaturvinsati Purâna*;* but these are not to be confounded with the *Purânas* of the *Hindus*; as, although they occasionally insert legends borrowed from the latter, their especial object is the legendary history of the *Tírthakaras*, or deified teachers, peculiar to the sect. The chief *Purânas* are attributed to JINA-SENA ACHÂRYA, whom some accounts make contemporary with VIKRAMÂDITYA; but the greater number, and most consistent of the traditions of the South, describe him as the spiritual preceptor of AMOGHAVERSHA, king of *Kânchí*, at the end of the ninth century of the Christian era. Analogous to the *Jain Purânas*, are works denominated *Cheritras*, their subject being, in general, the marvellous history of some *Tírthankara*, or some holy personage, after whom they are denominated; as the *Jinadatta Ráya Cheritra*, *Pújyapáda Cheritra*, and others. They have a number of works explanatory of their philosophical notions and religious tenets of the sect, as well as rituals of practice, and a grammatical system founded on the rules of SÁKATÁYANA, is illustrated by glosses and commentaries. The *Jains* have also their own writers on astronomy and astrology, on medicine, or the mathematical sciences, and the form and disposition of the universe.

This general view of *Jain* literature is afforded by the MACKENZIE Collection, but the list there given is very far from including the whole of *Jain* literature, or even a considerable proportion. The works there alluded to, are, in fact, confined to Southern India, and are written in *Sanscrit*, or the

---

* HAMILTON says, the *Digambaras* have twenty-four *Purânas*, twenty-three giving an account of each *Tirthankara*, and the twenty-fourth, of the whole; but this seems to be erroneous. The actions of the twenty-four *Tirthankaras* are described in a single *Purána*, but the section devoted to each is called after him, severally as the *Purána* of each, as *Rishabha Deva Purána*, one section of the *Chámunda Ráya Purána*. In the *Adi* and *Uttara Purânas*, forming, in fact, but one work; the *Adi*, or first part, is appropriated to the first *Tirthankara*, whilst the *Uttara*, or last portion, contains the accounts of all the other deified Sages. There are several collections, comprehending what may be termed twenty-four *Purânas*; but it does not appear that there are twenty-four distinct works so denominated.

dialects of the *Peninsula;* but every province of Hindustan can produce *Jain* compositions, either in Sanscrit or its vernacular idiom, whilst many of the books, and especially those which may be regarded as their scriptural authorities, are written in the *Prákrit* or *Mágadhi,* a dialect which, with the *Jains,* as well as the *Bauddhas,* is considered to be the appropriate vehicle of their sacred literature.

The course of time, and the multiplication of writings, have probably rendered it almost impossible to reduce what may be considered as the sacred literature of the *Jains* to a regular system. They are said to have a number of works entitled *Siddhántas* and *Agamas,** which are to them what the *Vedas* are to the Brahmanical Hindus, and this appears to be the case, although the enumeration which is sometimes made of them is of a loose and popular character, and scarcely reconcileable with that to be derived from written authority.†

---

* HAMILTON enumerates eight works, as the *Agamas* of the *Digambara* sect, the *Trailokya Sara,* the *Gomatisara, Pungjiraj, Trailokya Dipika, Kshepanâsara, Tribhangisara,* and *Shatpawar,* attributed to the pupils of *Mahavira.* He states also, that the *Swetambaras* have forty-five, or as some allege, eighty-four *Siddhántas,* amongst which he specifies the *Thánángi Sútra. Gnyánanti Sútra, Sugorangi Sútra, Upasakadesa, Mahapandanna, Nandi Sútra, Rayapseni, Jirabhigam, Jambudwipapannati, Surapannatti, Chandrasagarapannatti, Kalpa Sútra, Katantraoibhrama Sútra, Shakti Sútra,* and *Sangrahani Sútra.* Some of these are incorrectly named, and others inaccurately classed, as will be seen from what follows in the text.

† The following Works are either in my possession or in the library of the Sanscrit College of Calcutta:—Compositions descriptive of the tenets or practices of the *Jain* religion. *Bhagavatyangam.* This is one of the eleven primary works, and is entitled also in *Prakrit Viváha Pannatti,* in *Sanscrit Viváha,* or *Vivádhá Prájnapti,* Instruction in the various sources of worldly pain, or in the paths of virtue. It consists of lessons given to GAUTAMA by MAHÁVÍRA, and is in *Prákrit.* It contains 36,000 stanzas. *Bhagavtyanga Vritti,* a *Sanscrit* Commentary on the preceding (defective.) *Thánánga Sútra,*—also one of the eleven *Angas. Kalpa Sútra,* the precepts of the *Jain* faith—these are originally 1250; but they are interspersed with legends of the *Tirthánkaras,* and especially of MAHÁVÍRA, at the pleasure of the writer, and the several copies of the work therefore differ. *Prákrit.*

The author of the *Abhidhána Chintámani*, a useful vocabulary, HEMACHANDRA, is well known as a zealous and able propagator of the *Jain* doctrines in the twelfth century. He was no doubt well versed in the peculiarity of the system which he taught, and may be regarded as a safe guide.

Kalpa Sútra Bálabodha, a sort of abridgement of the preceding. *Prákrit.*
Kalpa Sútra Siddhanta, the essence of the *Kalpa Sútra. Prákrit.*
Dasavaikalika Sútra. Prákrit.
Ditto. *Tika.*
Rayaprasna Sútra Siddhánta. Tika.
Gautamaprashtha. Prákrit.
Sangrahini Sútra. Prákrit.
Laghu Sangrahini Sútra.
Nava Tatwa Sútra. Prákrit.
Nava Tatwa Prakarana. Prákrit.
Nava Tatwa Bálabodha. Prákrit.
Karma Grantha.
Jiva Vichára. Sanscrit.
Jiva Vinaya.
Smarana Sútra. Prákrit.
Vriddhátichára. Prákrit.
Sindúraprakára Tika. Sanscrit.
Ekavinsati Sthána. Bháshá.
Dasakshapanavratavidhi. Bháshá.
Upadesa Málá. Prákrit.
Pratikramana Vidhi. Prákrit.
Pratikramana Sútra. Bháshá.
Chaturdasa Gunasthána. Bháshá.
Chaturdasa Gunanámáni.
Pakshi Sútra. Bháshá.
Shattrinsat Kermakathá. Bháshá.
Dhermabuddhi Chatushpadi. Bháshá.
Bálavibodha. Bháshá.
Upadhánavidhi. Prákrit.
Ashtáhnikamahotsava. Prákrit.
Ashtáhnikavyákhajána.
Mahámuni Swádhyáya.
Pragnásúkta Muktávalí.
Arádhana Prakára.
Párswanátha Gíta.
Uttarádhyáyana Gíta.
Sadhusamáchári.
Srávakárádhana.
Jnyánapújá.
Dikshámahotsava.
Barah Vrata.
Saptavinsati Sádhu Lakshana.
Rátribhojana Nishedha.
Sádhwapáshána Vidhi.
Dwisashti Vákya.
Kshetrasamása Sútra.
Samyaktwádhyáyana.
Prishnottára Retnamálá.
Navakáránta Bálabodha.
Asahyana Vidhi.
Santaraka Vidhi.
Atmánusásana. Bháshá.
Panchástikáya, according to the *Digambara* faith.
Jinapratimá Sthápana Vidhi.
Jalakshálana Vidhi.
Sudopakára Muktávalí.
Moksha Márga.
Nítisangraha.
Vicháramanjari.
Párswanátha Dasabhavávisaha.
Satavisabhava.
Anandasrávaka Sandhi.
Rohinítapa.
Siddháchala Pújá.
Pújápaddhati. Bháshá.
Sílopadesa Málá.
Snána Vidhi.
Navapattatapa Vidhi.
Amritáshtamitapa.

In his vocabulary he specifies what appear to be the *Jaina* scriptures, at least in the estimation of the *Swetámbara* sect, to which he belonged, and in a valuable Commentary on his own work he has further particularised the works named in his text. From this it appears that the

---

Dévapújá.
Baranbhavanasandhi. Bháshá.
Panegyrics of the *Jain* teachers, &c. which are not unfrequently repeated in the temples.
Sánti Jina Stava. Bháshá.
Vrihat Sánti Stava. Sanscrit.
Mahávira Stava. Bháshá.
Laghu Sánti Stava.
Rishabha Stava.
Párswanáth Stava.
Párswanáth Stuti. Prákrit.
Neminátha Stava.
Ashanta Stava. Prákrit.
Ajitasánti Stava.
Bhaktamaya Stotra.
Kalyána Mandira Stotra. Sanscrit.
Chaturvinsati dandakastava.
Sádhubandana.
Satrunjaya Stava.
Párswanáth Namaskára.
Champaka Stavana.
Upasergahara Stotra.
Guru Stava.
Karmma Stava.

LEGENDARY TALES AND HISTORIES.

Padma Purána. Bháshá.
Mahávira Cheritra, which is called by others a portion of the *Trisashti Salátka Purushá Cheritra*, or Legend of the sixty-three personages, most eminent in *Jain* Tradition. *Sanscrit.*
Nemirájarshi Cheritra.
Sálabhadra Cheritra. Bháshá.
Chitrasena Cheritra. Prákrit.
Gajasukumára Cheritra. Bháshá.
Chandrarája Cheritra. Bháshá.
Bhaktámara.
Sripála Cheritra. Bháshá.
Kalikáchárya Kathá.
Samyaktwa Kaumudi.
Vastradána Kathá.
Meghadútapada Samasya.
Avantisakumára Cheritra.
Retnachúropákhyána.
Mrigávati Cheritra.
Retnachúra Muni; Chaupai. Bháshá.
Mrigavati Chaupai. Bháshá.
Sádhu Charitra.
Satrunjaya Máhátmya.
Gajasinha Charitra.
Dasadrishtántá Kathá.

MISCELLANEOUS.

Vriddhayavana, Astronomy. Sanscrit.
Chaturdasaswapanavichára.
Trailokya Dípika.
Setunjoddhar.
Páthanárambhapíthika.
Hastarekhavivarana. Prákrit.
Námávali.
Patávali.
Many of these are of small extent, but others are exceedingly voluminous, as the *Bhagavatyanga, Padma Purána, Satrunjaya Mahátmya*, and others.

principal authorities of a sacred character were termed *Angas*, and were eleven in number, or with a supplementary division, twelve. They are thus enumerated and described; *Achárânga*, a book teaching sacred observances after the practice of *Vasishthá* and other saints. *Sútrakritángam*, a work on acts imposed by positive precepts. *Sthánángam*—On the organs in which life abides, or the ten acts essential to purity. *Samavayángam*—On the hundred *Padárthas or* categories. *Bhagavátyangam*—On the ritual, or rules for worship. *Jnyátadhermakathá*—An account of the acquisition of knowledge by holy personages. *Upásakadasá*—Rules for the conduct of *Sráwakas*, or secular *Jains*, apparently in ten lectures. *Antakriddasa*—On the actions of the *Tírthakaras*, in ten lectures. *Anuttaropapatikadara*—On the principal or final births of the *Tírthakaras*, in ten lectures. *Prasnavyákaranam*—Grammar of questions, probably on the Code of the *Jains*. *Vipákasrutam*—On the fruits or consequences of actions.

With these are connected inferior *Angas* or *Upángas*, the names of which are not specified—whilst the *Drishtabáda*, the twelfth *Anga*, which seems to be a supplementary authority, is divided into five portions, entitled; *Parikermma*—On moral acts, *Sútra*—Precepts for conduct and life; *Púrvánuyoga*—On the doctrines and practice of the *Tírthakaras* before attaining perfection; *Púrvagata*—On the same after perfection! *Chúliká*—On doctrines and practice not comprised in the two preceding.

These different works profess to be derived from the oral instructions of MAHÁVÍRA himself to his disciples, especially to GAUTAMA; but besides these a class of works is enumerated by HEMACHANDRA, entitled *Púrvas*, because they were drawn up by the *Ganadharas* before the *Angas*.*

---

* सूत्रितानिगणधरैरङ्गेभ्यः पूर्व्वमेवयत्।
पूर्व्वाणीत्यभिधीयंतेतेनैतानिचतुर्दश ॥ *Mahá Cher.* Section 5.

There are fourteen of them treating of the chief tenets of the sect, apparently sometimes controversially, as the *Astipravâda*, the doctrine of existence and non-existence. *Jnyânapravâda*, the doctrine of holy knowledge —*Satyapravâda*, discussion of truth—*Atmapravâda*, investigation of spirit—*Prânâvâya*, nature of corporeal life—*Kriyâvisâla*, consequences of acts, and others.* They are held to be the works of MAHAVÎRAS *Ganas*, or of that *Tîrthakâra* and his predecessors, or to have emanated from them originally, although committed to writing by other hands. Some of them still exist, it appears, † although in general their places have been assumed by a list of more recent compositions.

From this brief statement it will be evident that there is no want of original authorities with regard to the belief, the practices, or the legends of the *Jaina* sect. There is indeed more than a sufficiency, and the vast extent of the materials is rather prejudicial to the enquiry, it being impossible to consult any extensive proportion of what has been written, and it being equally impossible without so doing to know that the best guides have been selected. For such accounts as are here given, the Vocabulary of HEMACHANDRA, with his own Commentary, the *Mahâvîra Cheritra* of the same author, the *Kâlpa Sûtra*, the *Avasyaka-vrihad Vritta*, the *Bhagavatyanga Vritta*, *Nava Tatwabodha*, and *Jîva Vichâra* have chiefly been consulted.

The leading tenets of the *Jains*, and those which chiefly distinguish them from the rest of the *Hindus*, are well known—they are, first, the

---

* A similar enumeration of these Works occurs in the *Mahâvîra Cheritra*.

† Thus the *Thânângisûtra* and *Upasakadesa*, of HAMILTON, are no doubt the *Sthanânga* and *Upasakadasa*, of *Hemachandra's* text, and the *Bhagavatyanga* is in the *Sanscrit* College Library.

denial of the divine origin and infallible authority of the *Vedas;* secondly, the reverence of certain holy mortals who acquired, by practices of self-denial and mortification, a station superior to that of the gods; and thirdly, extreme and even ludicrous tenderness for animal life.

The disregard of the authority of the *Vedas* is common to the *Jains* and the *Bauddhas*, and involves a neglect of the rites which they prescribe: in fact, it is in a great degree from those rites that an inference unfavourable to the sanctity of the *Vedas* is drawn, and not to speak of the sacrifices of animals which the *Vedas* occasionally enjoin; the *Homa*, or burnt offering, which forms a part of every ceremonial in those works, is an abomination; as insects crawling amongst the fuel, bred by the fermented butter, or falling into the flame, cannot fail to be destroyed by every oblation. As far however as the doctrines they teach are conformable to *Jain* tenets, the *Vedas* are admitted and quoted as authority.

The veneration and worship of mortals is also common to the *Jains* and *Bauddhas*, but the former have expanded and methodised the notions of the latter. The *Bauddhas*, although they admit an endless number of earthly *Buddhas* to have existed, and specify more than a century of names,* confine their reverence to a comparatively small number—to seven. The *Jainas* extend this number to twenty-four for a given period, and enumerate, by name, the twenty-four of their past age, or *Avasarpini*, the twenty-four of the present, and the twenty-four of the age to come. The statues of these, either all or in part, are assembled in their temples, sometimes of colossal dimensions, and usually of black or white marble. The objects held in highest esteem in *Hindustan* are PÁRSWANÁTH and MAHÁVIRA, the twenty-third and

* Asiatic Researches, vol. XVI. pages 446 to 449.

twenty-fourth *Jinas* of the present era, who seem to have superseded all their predecessors.

The generic names of a *Jaina* saint express the ideas entertained of his character by his votaries. He is *Jagatprabhu,* lord of the world; *Kshínakermmá,* free from bodily or ceremonial acts; *Sarvajna,* omniscient; *Adhíswara,* supreme lord; *Devádideva,* god of gods; and similar epithets of obvious purport; whilst others are of a more specific character, as *Tirthakára,* or *Tirthankara, Kevalí, Arhat,* and *Jina.* The first implies one who has crossed over, *(Tíryate anena,)* that is, the world, compared to the ocean: *Kevalí,* is the possessor of *Kevala,* or spiritual nature, free from its investing sources of error: *Arhat* is one entitled to the homage of gods and men, and *Jina* is the victor over all human passions and infirmities.*

Besides these epithets, founded on attributes of a generic character, there are other characteristics common to all the *Jinas* of a more specific nature. These are termed *Atisayas,* or super-human attributes, and are altogether thirty-six; four of them, or rather four classes, regard the person of a *Jina,* such as the beauty of his form, the fragrance of his body, the white colour of his blood, the curling of his hair, its non-increase, and that of the beard and nails, his exemption from all natural impurities, from hunger and thirst, from infirmity and decay: these properties are considered to be born with him. He can collect around him millions of beings, gods, men, and animals, in a comparatively small space, his voice is audible to a great distance, and his language, which is *Arddha Màgadhí,* is intelligible to animals, men and gods, the back of his head is surrounded with a halo of light, brighter than the

---

* तीर्य्यतेसंसारसमुद्रोऽनेनेतितीर्थं तत्करोतितीर्थकरः। सर्व्वज्ञावरणविलयेचेतनस्वरूपा विर्भावःकेवलं तदस्यास्तिकेवलिन्सुरेंद्रादिकृतांपूजामर्हत्यर्हन्जयतिरागद्वेषमोहानितिजिनः॥

These Etymologies are from *Hemachandra's* Commentary.

disk of the sun, and for an immense interval around him, wherever he moves, there is neither sickness nor enmity, storm nor dearth, neither plague portents, nor war. Eleven *Atisayas* of this kind are ascribed to him. The remaining nineteen are of celestial origin, as the raining of flowers and perfumes, the sound of heavenly drums, and the menial offices rendered by *Indra* and the gods.

Notwithstanding the sameness of the general character and identity of generic attributes, the twenty-four *Jinas* are distinguished from each other in colour, stature, and longevity. Two of them are red, two white, two blue, two black, the rest are of a golden hue, or a yellowish brown. The other two peculiarities are regulated with very systematic precision, and observe a series of decrement from *Rishabha*, the first *Jina*, who was five hundred poles in stature, and lived 8,400,000 great years to *Mahávíra* the 24th, who had degenerated to the size of man, and was not more than forty years on earth. These peculiarities have been detailed by Mr. COLEBROOKE, in the ninth volume of the Researches, and he draws a probable inference from the return to reason in the stature and years of the two last *Jinas*, that they alone are to be considered as historical personages. The rest are the creatures of fiction. The notion of decreasing longevity, like that of the existence of human beings, superior to the gods, is common to the *Bauddhas*.*

---

* A comparison of the *Jain* and *Bauddha* series suggests strong confirmation of the opinion that the *Jain* legends are only *Bauddha* notions exaggerated. The ages of the seven *Buddhas* run thus—

Vipáswi,	80,000	Years.
Sikhi,	70,000	ditto.
Viswabhú,	60,000	ditto.
Krakuchchanda,	40,000	ditto.
Kanaka,	30,000	ditto.
Kasyapa,	20,000	ditto.
Sákya,	100	ditto.

A. R. vol. XVI. p. 453. The last *Jina* but one, or *Parswanath*, lived like *Sákya*, 100 years.

There is also great similarity in the general tenor of the legends related of each of the *Jinas*. They are all born a number of times, and in a variety of characters, before they arrive at the state of a *Tírthankara*: after which, as their attainment of divine knowledge is the work of self-denial and ascetic meditation, we need not expect much varied incident in their adventures, a sketch of the life of MAHÁVÍRA, from the *Mahávíra Cheritra*, will convey some notion of their ordinary history, whilst further illustration may be derived from an abstract of the *Párswanáth Cheritra*, or life of PÁRSWANÁTH, in the Royal Asiatic Society's Transactions.

LIFE OF MAHÁVÍRA.

The twenty-fourth *Tírthankára* MAHÁVÍRA's first birth, which occurred at a period indefinitely remote, was as NAYASÁRA, head man of a village, in the country of *Vijaya*, subject to SATRUMÉRDDANA. His piety and humanity elevated him next to the heaven called *Saudherma*, where he enjoyed happiness for some oceans of years. He was next born as MARICHI, the grandson of the first *Tírthankara* RISHABHA, then transferred to the *Brahmaloka*, whence he returned to earth as a worldly-minded and sensual *Brahman*, the consequence of which was his repeated births in the same caste, each birth being separated by an interval passed in one of the *Jain* heavens, and each period of life extending to many *lakhs* of years. He then became VISWABHÚTA, prince of *Rajagriha*, and next a *Vàsudeva*, named TRIPRÍSHTHA, from having three back bones: his uncle and foe in a former life, *Visabhanandi*, was born as his *Protagonist*, or *Prativásudeva*, named ASWAGRIVA or HAYAGRIVA, and was, in the course of events, destroyed by the *Vàsudeva*, a palpable adaptation of the *Pauranic* legend of VISHNU and HAYAGRIVA. TRÍPRISHTHA having put his Chamberlain cruelly to death, was condemned to hell, and again born as a lion: he migrated through various forms, until he became the *Chakravertti* PRIYAMITRA, in the division of the world, *Mahavideha*. After a victorious reign of eighty-four

lakhs of years, he became an ascetic for a further period of a hundred *lakhs*, and was then translated to one of the higher heavens. Thence he returned to earth in the *Bharata* division, as NANDANA, the son of JITASATRU, who adopted a life of devotion and diligently adored the *Jinas*. After an existence of twenty-five *lakhs* of years, he was raised to the dignity of king of the gods in the *Pushpottara* heaven, in which capacity he preserved his ancient faith, offering flowers to, and bathing daily the one hundred and eight images of the *Arhats*. Such exalted piety was now to meet with its reward, and the pains of existence to be terminated in the person of the *Tírthankara*, MÁHÁVÍRA, or VERDDHAMÁNA.

On the return of the spirit of NANDANA to earth, it first animated the womb of the wife of a *Brahman*, but MAHENDRA disapproving of the receptacle as of low caste, transferred it to the womb of TRISALÁ, wife of SIDDHÁRTHA, of the family of *Ikshwaku*, and prince of *Pavana*, in *Bharatakshetra*. MAHÁVIRA was born on the thirteenth of the light fortnight of *Chaitra*: the fifty-six nymphs of the universe assisted at his birth, and his consecration was performed by SAKRA, and the other sixty-three *Indras*. The name given by his father was VERDDHAMÁNA, as causing increase of riches and prosperity, but SAKRA gave him also the appellation of MAHÁVIRA, as significant of his power and supremacy over men and gods.

When arrived at maturity, MAHÁVÍRA was prevailed upon by his parents to marry YASODÁ, daughter of the prince SAMARAVÍRA. By her he had a daughter, PRIYADERSANÁ, who was married to JAMÁLI, a prince, one of the Saint's pupils, and founder of a schism. SIDDHÁRTHA and his wife died when their son was twenty-eight years old, on which MAHÁVIRA adopted an ascetic life, the government devolving on his elder brother NANDIVERDDHANA. After two years of abstinence and self-denial at home, he commenced an erratic life, and the attainment of the degree of a *Jina*.

During the first six years of his peregrination, MAHÁVÍRA observed frequent fasts of several months duration, during each of which he kept his eyes fixed upon the tip of his nose, and maintained perpetual silence. He was invisibly attended by a *Yaksha*, named SIDDHÁRTHA, who, at the command of INDRA, watched over his personal security, and where speech was necessary acted as spokesman. At *Nálandá*, a village near *Rájagriha*, MAHÁVÍRA acquired a follower named GOSÁLA, so called from his birth in a cow-house, a man of low caste and vulgar propensities, and who acts as a sort of buffoon.* He is involved in repeated difficulties and not unfrequently receives a beating, but when free from fault, the *Yakshas*, who attend on SIDDHÁRTHA, come to his aid, and destroy with fire the houses and property of his assailants. Amongst other enemies he provokes the followers of VERDDHANA SÚRI, the disciple of CHANDRA-ÁCHÁRYA, a teacher of the *Jain* faith, according to the doctrines of PÁRSWANÁTH. In the course of the dispute it appears that the followers of PÁRSWANÁTH wore clothes, whilst MAHÁVÍRA was indifferent to vesture, and the latter consequently belonged to the division of the *Jains* called *Digambaras*, or those who go naked, whilst PÁRSWANÁTH's disciples were *Swetámbaras*, dressed in garments. †

---

* Some curious and unintelligible things are related of this individual, which suggest a suspicion that the author had in view some of the oriental legends relating to *Mani* or *Manes*. The birth of GOSÁLA, in a cow-house, may or may not refer to Christianity; but it is also observed that his father and mother carried about a *Chitra pattika*, a painted cloth or picture, which GOSÁLA stole from them, and that when he adopted the service of MAHÁVÍRA, he abandoned the heresy of the picture, चित्रफलक पाषण्डं विहाय .

† They reply to GOSÁLA's enquiry: निर्ग्रन्थाः पार्श्वशिष्याः वयं "We are the pupils of PÁRSWA, free from restraint"—to which he rejoins कथन्नुयूयंनिर्ग्रन्था वस्त्रादिग्रन्थधारिणः। केवलं जीविकाहेतो रियं पाषण्डकल्पना॥ वस्त्रादि संगरहितो निरपेक्षोवपुष्यपि। धर्माचार्योहि यादृग्मेनिर्ग्रन्था तादृशाः खलु॥ "How can you be free from restraint encumbered with clothes and the like, these heretical practices are adopted merely for a livelihood: wholly unfettered by clothes and such things, and disregarding the body, the followers of such a teacher as mine is, are the only persons exempt from restraint." Further confirmation of MAHÁVÍRA and his followers being *Digambaras*, occurs in various places, especially in a passage where GOSÁLA gets beaten, and almost killed by the women of a village in *Magadha*, because he is a naked *Sramana*, or mendicant.

During the six years expended in this manner, MAHÁVÍRA visits a number of places, most of which appear to be in *Behar* and the adjacent provinces, as *Rájagriha*, *Srávasti* near *Oude*, *Vaísáli*, which is identified with the capital of *Behar*, and others.

Proceeding on his peregrinations, MAHÁVÍRA voluntarily exposed himself to be maltreated by the *Mlechha* tribes of *Vajrabhúmi*, *Suddhibhúmi*, and *Lát*, or *Lár*, the countries apparently of the *Gonds*, who abused and beat him, and shot at him with arrows, and baited him with dogs; to all which he offered no resistance, and indeed rejoiced in his sufferings; for however necessary to personal purification, it is not the duty of a *Jain* ascetic to inflict tortures upon himself—his course of penance is one of self-denial, fasting and silence, and pain however meritorious its endurance, must be inflicted by others, not himself. At the end of the ninth year, MAHÁVÍRA relinquished his silence in answer to a question put by GOSÁLA, but continued engaged in the practice of mortification and in an erratic life. His squire having acquired from him the possession of the *Téjalesya*, or power of ejecting flame, and having learned from certain of the disciples of PÁRSWANÁTH, what is technically termed the *Mahánimitta* of the eight *Angas*, intending probably their scriptural doctrines, set up for himself as a *Jina*, and quitted his master.

INDRA having declared that MAHÁVÍRA's meditations could not be disturbed by men or gods, one of the inferior spirits of heaven, indignant at the assertion, assailed the Sage with a variety of horrors and temptations, but in vain. MAHÁVÍRA's pious abstraction was unbroken. He then wandered about and visited *Kausámbi*, the capital of *Satánika*, where he was received with great veneration, and where his period of self-denial ended in perfect exemption from human infirmities. The whole of the time expended by him in these preparatory exercises was twelve years and six months, and of this he had fasted nearly eleven years. His various

fasts are particularised with great minuteness, as one of six months, nine of four months each, twelve of one month, and seventy-two of half a month each, making altogether ten years and three hundred and forty-nine days.

The bonds of action were snapped like an old rope, and the *Kevala*, or *only knowledge* attained by MAHÁVÍRA on the north bank of the *Rijupáliká*, under a *Sál* tree, on the tenth of the light fortnight of *Vaisákha*, in the fourth watch of the day, whilst the moon was in the asterism *Hasta*. INDRA instantly hastened to the spot, attended by thousands of deities, who all did homage to the Saint, and attended him on his progress to *Apápápuri*, in *Behar*, where he commenced his instructions on a stage erected for the purpose by the deities, a model of which is not uncommonly represented in *Jain* temples. The following is the introductory lecture ascribed to MAHÁVÍRA by his biographer.

"The world is without bounds, like a formidable ocean; its cause is action *(Karma,)* which is as the seed of the tree. The being (*Jiva*) invested with body, but devoid of judgment, goes like a well-sinker, ever downwards, by the acts it performs, whilst the embodied being which has attained purity, goes ever upwards, by its own acts, like the builder of a palace. Let not any one injure life, whilst bound in the bonds of action; but be as assiduous in cherishing the life of another as his own. Never let any one speak falsehood, but always speak the truth. Let every one who has a bodily form avoid giving pain to others as much as to himself. Let no one take property not given to him, for wealth is like the external life of men, and he who takes away such wealth commits as it were murder. Associate not with women, for it is the destruction of life: let the wise observe continence, which binds them to the Supreme. Be not incumbered with a family, for by the anxiety it involves, the person separated from it falls like an ox too heavily laden.

If it be not in their power to shun these more subtle destroyers of life, let those who desire so to do, avoid at least the commission of all gross offences."

When MAHÁVÍRA's fame began to be widely diffused, it attracted the notice of the *Brahmans* of *Magadhá*, and several of their most eminent teachers undertook to refute his doctrines. Instead of effecting their purpose, however, they became converts, and constituted his *Ganadharas*, heads of schools, the disciples of MAHÁVÍRA and teachers of his doctrines, both orally and scripturally. It is of some interest to notice them in detail, as the epithets given to them are liable to be misunderstood, and to lead to erroneous notions respecting their character and history.

This is particularly the case with the first INDRABHÚTI, or GAUTAMA, who has been considered as the same with the GAUTAMA of the *Bauddhas*, the son of MÁYÁDEVI, and author of the Indian metaphysics.* That any connexion exists between the *Jain* and the *Brahmana* Sage is, at least, very doubtful; but the GAUTAMA of the *Bauddhas*, the son of SUDHODANA and MÁYÁ, was a *Kshetriya*, a prince of the royal or warrior caste. All the *Jain* traditions make their GAUTAMA a *Brahman*, originally of the *Gotra*, or tribe of GOTAMA *Rishi*, a division of the *Brahmans* well known, and still existing in the South of India. These two persons therefore cannot be identified, whether they be historical or fictitious personages.

INDRABHÚTI, AGNIBHÚTI, and VÁYUBHÚTI, are described as the sons of VASUBHÚTI, a *Brahman* of the *Gotama* tribe, residing at *Govara*, a village in *Magadha:* from their race, HEMACHANDRA, in the Commentary on the Vocabulary, observes, they are all called GAUTAMAS. VYAKTA and

* R. A. S. Transactions, vol. I. p. 538.

SUDHERMA were the sons of DHANAMITRA and DHAMMILLA, two *Brahmans* of *Kollaka*, the former of the *Bharadwája*, and the latter of the *Agnivaisya* tribe. MANDITA and MAURYA PUTRA were half-brothers, the sons of VIJAYADEVÍ by DHANA DEVA and MAURYA, two *Brahmans* of the *Vásishtha* and *Kásyapa* races, but cousins by the mother's side, and consequently, according to the custom of the country, it is stated, the one took the other's widow to wife upon his decease. AKAMPITA was the son of a *Maithili Brahman*, of the *Gautama* tribe. ACHALABHRÁTÁ, of a *Brahman* of Oude, of the *Háríta* family. METARYA was a *Brahman* of *Vatsa*, of the *Kaundilya* tribe; and PRABHÁSA, a *Brahman* of the same race, but a native of *Rájagrtha* in Behar. These are the eleven *Ganadharas*, or *Ganádhipas*, holders or masters of *Jain* schools, although, before their conversion, learned in the four *Vedas*, and teaching the doctrines contained in them.

These converts to *Jain* principles are mostly made in the same manner: each comes to the Saint, prepared to overwhelm him with shame when he salutes them mildly by name, tells them the subject that excites their unuttered doubts and solves the difficulty, not always very satisfactorily or distinctly it must be admitted; but the whole is an epitome of the *Jain* notions on those subjects which chiefly engage the attention of the Hindu philosophers.

INDRABHÚTI doubts whether there be life *(Jíva)* or not—MAHÁVÍRA says there is, and that it is the vessel of virtue and vice, or where would be the use of acts of virtue or piety.

AGNIBHÚTI questions if there be acts *(Kerma)* or not, to which MAHÁVÍRA replies in the affirmative, and that from them proceed all bodily pleasure and pain, and the various migrations of the living principle through different forms.

VÁYUBHÚTI doubts if life be not body, which the Sage denies, as the objects of the senses may be remembered after the senses cease to act, even after death, that is, in a succeeding state of existence occasionally.

VYAKTA questions the reality of elementary matter, referring it with the *Vedántis* to illusion; the Sage replies that the doctrine of vacuity is false, illustrating his position rather obscurely, by asking if there are no other worlds than the *Gandharba*, cities of dreams, or castles in the air.

SUDHERMA imagines that the same kind of bodies which are worn in one life will be assumed in another, or that a human being must be born again amongst mankind; for as the tree is always of the same nature as the seed, so must the consequences of acts, in a peculiar capacity, lead to results adapted to a similar condition. This MAHÁVÍRA contradicts, and says that causes and effects are not necessarily of the same nature as horn, and similar materials are convertible into arrow barbs, and the like.

MANDITA has not made up his mind on the subjects of bondage and liberation, (*Bandha* and *Moksha*); the *Jina* explains the former to be connexion with and dependance on worldly acts, whilst the latter is total detachment from them, and independence of them effected by knowledge.

MAURYAPUTRA doubts of the existence of gods, to which MAHÁVÍRA opposes the fact of the presence of INDRA, and the rest around his throne. They cannot bear the odour of mere mortality, he adds; but they never fail to attend at the birth, inauguration, and other passages of the life of a *Jina*.

AKAMPITA is disposed to disbelieve the existence of the spirits of hell, because he cannot see them; but the Sage says that they are visible to those possessing certain knowledge, of whom *he* is one.

ACHALABHRÂTÁ is sceptical as to the distinction between vice and virtue, for which MAHÁVÍRA rebukes him, and desires him to judge of them by their fruits: length of days, honorable birth, health, beauty and prosperity, being the rewards in this life of virtue; and the reverse of these the punishments of vice.

METÁRYA questions a future existence, because life having no certain form must depend on elementary form, and consequently perish with it; but MAHÁVÍRA replies, that life is severally present in various elementary aggregates to give them consciousness, and existing independent of them, may go elsewhere often they are dissolved. He adds, in confirmation of the doctrine, that the *Srutis* and *Smritis*, that is, the scriptural writings of the *Brahmanas*, assert the existence of other worlds.

The last of the list is PRABHÁSA, who doubts if there be such a thing as *Nírván*, that state of non-entity which it is the object of a *Jaina* saint to attain. The solution is not very explicit. *Nírván* is declared to be the same with *Moksha*, liberation, and *Kermakshaya*, abrogation of acts, and that this is real is proved by the authority of the *Veda*, and is visibly manifested in those who acquire true knowledge.

According to this view of the *Jain* system, therefore, we find the vital principle recognised as a real existence, animating in distinct portions distinct bodies, and condemned to suffer the consequences of its actions by migrations through various forms. The reality of elementary matter is also asserted, as well as of gods, demons, heaven, and hell. The final state of the vital and sentient principle is left rather obscure; but as its actual and visible exemption from human acts is taught, it follows that it is exempt from their consequences or repeated births in various shapes, and therefore ceases to be in any sensible or suffering form. It is unnecessary to dwell longer on the subject here, as we shall have occasion to recur to it.

After the conversion of these *Brahmans* and their disciples, MAHÁVÍRA instructed them further in his doctrines, and they again taught them to others, becoming the heads of separate schools. AKAMPITA and ACHALA-BHRÁTÁ, however, and METÁRYA and PRABHÁSA taught in common, so that the eleven *Ganádhipas* established but nine *Ganas* or classes.

Having thus attained the object of his penance and silence, MAHÁVÍRA, attended by his disciples, wandered about to different places, disseminating the *Jain* belief, and making numerous converts. The scene of his labours is mostly along the Ganges, in the modern districts of *Behar* and *Allahabad*, and principally at the cities of *Kausámbí* and *Rájagriha*, under the kings SATÁNÍKA and SEENÍKA, both of whom are *Jains*. The occurrences described relate more to the disciples of the Saint than to himself, and there are some curious matters of an apparently historical character. There is also a prophetic account of HEMACHANDRA himself, and his patron KUMÁRA PÁLA of *Guzerat*, put into the mouth of MAHÁVÍRA; but these are foreign to our present purpose, which is confined to the progress of the *Jain* sage.

MAHÁVÍRA having completed the period of his earthly career, returned to *Apápapuri*, whither he was attended by a numerous concourse of followers of various designations. However fanciful the enumeration, the list is not uninstructive, as it displays the use of various terms to signify different orders of one sect, and not, as has been sometimes erroneously supposed, the sect itself. *Sramanas*, *Sadhs* and *Srávaks*, may be *Jains*, but they are not necessarily so, nor do they singly designate all the individuals of that persuasion. *Virá's* train consists of *Sádhus*, holy men, fourteen thousand; *Sádhwi's* holy women, thirty-six thousand; *Sramanas*, or ascetics, versed in the fourteen *Purvas*, three hundred; *Avadhíjnánis*, those knowing the limits or laws, one thousand and three hundred; *Kevalis*, or detached from acts, seven hundred; *Manovis*, possessors of intellectual wisdom, five

dred; *Bádís*, controversialists, four hundred; *Srávakas*, the male laity, one lack and fifty-nine thousand; and *Srávikás*, female hearers of the word, double that number, or three lacks and eighteen thousand. The only *Ganadharas* present, were GAUTAMA and SUDHERMA, the other nine having attained felicity, or having died before their master.

The period of his liberation having arrived, MAHÁVÍRA resigned his breath, and his body was burned by SAKRA and other deities, who divided amongst them such parts as were not destroyed by the flames, as the teeth and bones, which they preserved as reliques; the ashes of the pile were distributed amongst the assistants: the gods erected a splendid monument on the spot, and then returned to their respective heavens. These events occurred on the day of new moon, in the month *Kártik*, when MAHÁVIRA was seventy-two years of age, thirty of which were spent in social duties, and the rest in religious avocations, and he died two hundred and fifty years after the preceding *Jina*, PÁRSWANÁTH: no other date is given, but in the passage in the prophetic strain above alluded to, it is mentioned that KUMÁRA PÁLA will found *Anahilla Patan*, and become the disciple of HEMACHANDRA, one thousand six hundred and sixty-nine years after the death of MAHÁVÍRA.

The conversion of KUMÁRA PÁLA occurred about A. D. 1174, and consequently the last *Jina* expired about five hundred years before the Christian era. According to other authorities, the date assigned to this event, is commonly about a century and a half earlier, or before Christ six hundred and sixty-three,* but HEMACHANDRA is a preferable guide,

* Colonel MACKENZIE, on the information of the *Belligolu Jains*, says *Verddhamána* attained beatitude 2464 years before the year 1801, which is 663 years before Christ. Mr. COLEBROOKE observes, that the *Jains* of Bengal reckon *Verddhamána* to have lived 580 years before *Vikramaditya*, which is A. C. 636.

although, in point of actual chronology, his date is probably not more to be depended upon than those derived from other sources.

The doctrines of the *Jains*, which constitute the philosophy of their system, it is not part of the present plan to discuss: but a few of the leading tenets, as derived from original authorities, may be here briefly adverted to. It is the more necessary to dwell on the subject as the chief opinions of the sect of *Jina*, as described elsewhere, have, for the most part, been taken from verbal communication, or the controversial writings of the *Brahmans*.

An eternal and presiding first cause forms no part of the *Jain* creed, nor do the *Jains* admit of soul or spirit as distinct from the living principle. All existence is divisible into two heads—*Life* (*Jiva*) or the living and sentient principle; and *Inertia* or *Ajiva*, the various modifications of inanimate matter. Both these are uncreated and imperishable. Their forms and conditions may change, but they are never destroyed; and with the exception of the unusual cases in which a peculiar living principle ceases to be subject to bodily acts, both life and matter proceed in a certain course, and at stated periods the same forms, the same characters, and the same events, are repeated.

To proceed, however, according to the original authorities, all objects, sensible or abstract, are arranged under nine categories, termed *Tatwas*, truths or existences, which we shall proceed to notice in some detail.

I. *Jiva*, Life, or the living and sentient principle, as existing in various forms, but especially reducible to two classes, those with and those without mobility. The first comprises animals, men, demons, and gods—

the second, all combinations of the four elements, earth, water, fire, air, as minerals, vapours, meteors, and tempests—and all the products of the vegetable kingdom. They are again arranged in five classes, according to their possession of as many *Indriyas*, or sensible properties. The wholly unconscious bodies to ordinary apprehension, but which have a subtle vitality perceptible to saintly and super-human beings, have the property of form: such are minerals, and the like. Snails, worms, and insects, in general, have two properties—form and face. Lice, fleas, and the like, have three properties, or form, face, and the organ of smell. Bees, gnats, and the rest have, in addition to these, vision; whilst animals, men, demons, and gods, have form, vision, hearing, smell, and taste. To these five predicates of vital beings, two others are sometimes added, and they are said to be *Sanjnina* and *Asanjninà*, or, born by procréation, or spontaneously generated. Again, these seven orders are distinguished as complete or incomplete, making altogether fourteen classes of living things. According to the acts done or suffered in each condition, the vital principle migrates to an inferior or superior grade, until it is emancipated from bodily acts altogether. It is a peculiarity of the *Jain* notions of life, that it is always adapted to the body it animates, and diminishes with the gnat, and expands to the elephant, a notion that is treated with just ridicule by the *Brahmans*. Generically, it is defined to be without beginning or end, endowed with attributes of its own agent and enjoyer, conscious, subtle, proportionate to the body it animates; through sin, it passes into animals, or goes to hell; through virtue and vice combined, it passes into men, and through virtue alone, ascends to heaven; through the annihilation of both vice and virtue, it obtains emancipation.

II. *Ajiva*, the second predicate of existence, comprises objects or properties devoid of consciousness and life. These seem to be vaguely and variously classed, and to be in general incapable of interpretation;

but the enumeration is commonly fourteen, like the modification of vitality. They are *Dhermástikaya*, *Adhermástikaya*, and *Akásástikaya*, each comprehending three varieties. *Kála*, or time, is the tenth; and *Pudgála*, or elementary matter, in four modifications, completes the series.

It is not very easy to understand these technicalities, for the etymology of the words is of little avail. *Astikaya* indicates the existence of body, "*Body is;*" whilst *Dherma* signifies virtue, and *Adherma*, vice; but *Dherma* means also peculiar function or office, in which sense it seems to be here intended, thus—*Dhermástikaya* is defined to be that which facilitates the motion of animate or inanimate bodies, as water for fish. *Adhermástikaya* is that which impedes or stops their motion. *Akásástikaya* is the principle of repulsion, that which keeps bodies separate, or space: the varieties of these are only in degree, of little, more, and complete. Time is sufficiently intelligible, but the *Jains* indulge in modifications of it infinitely more extravagant than those for which the Hindus are reproached; thus after enumerating days, weeks, months, and years, we have the *Palya*, or *Palyopama*, a period measured by the time in which a vast well, one hundred *Yojans* every way, filled with minute hairs so closely packed that a river might be hurried over them without penetrating the interstices, could be emptied at the rate of one hair in a century. A *Sagaropama* is one hundred million millions of *Palyas*, and an *Avasarpini* and *Utserpini*, which make up a great age, consist each of one hundred million millions of *Sagaras*. *Pudgala* is atomic matter, distinguished like the first three categories, by being combined in three degrees—little, much, and most, whilst it adds a fourth state, or that of *Paramanu*, primitive, subtle, indivisible, and uncombined.

III. The third *Tatwa* is *Punya*, *Good*, or whatever is the cause of happiness to living beings: the sub-divisions of this category are forty-two, it will be sufficient here to enumerate a few of the principal.

1. *Ucchairgotra*, high birth, rank, or the respect of mankind.

2. *Manushyagati*, the state of man, either as obtained from some other form of being or continuance in it.

3. *Suragati*, the state of divinity, Godhead.

4. *Panchendriya*, the state of superior vitality, or possession of five organs of sense.

5. *Panchadeha*, the possession of body, or form of one of five kinds.

Audárika, elementary—that arising from the aggregation of elements, as the bodies of men and beasts.

Vaikriya, transmigrated—that assumed in consequence of acts, as the forms of spirits and gods.

Áhárakam, adventitious, one assumed, such as that of the *Purvadharas*, of one cubit in stature, when they went to see the *Tirthankaras* in *Mahá-videhakshetra*.

Taijasa, the form obtained by suppressing mortal wants, in which state fire can be ejected from the body.

Kármanam, the form which is the necessary consequence of acts. These two last are necessarily connected from all time, and can only be disunited by final liberation, or *Moksha*.

Other varieties of '*Good*,' are colour, odour, flavour, touch, warmth, coolness, and the like.

IV. *Pápa*, or '*Ill*,' in contradistinction to the preceding, and implying that which is the cause of unhappiness to mankind: there are eighty-two kinds;

As the five *Ávaranas*, or difficulties in acquiring as many gradations of holy or divine wisdom. Five *Antarágas*, disappointments, or impediments, as not obtaining what is about to be presented, not being able to enjoy an object of fruition when in possession of it, and want of vigour though in bodily health. Four *Dersanavasánas*, obstruction, or impediment to information derivable from the senses, or the understanding; or to the acquirement of divine knowledge. Five states of sleep, inferior birth, pain, as a condition of existence, as when condemned to purgatory, belief in false gods, defect of size or shape, and all the human passions and infirmities—as anger, pride, covetousness, &c., including, amongst the ills of life, laughter and love.

V. *Ásrava* is that source from which the evil acts of living beings proceed. The varieties are the five *Indriyas*, or organs of sense; the four *Kasháyas*, or passions, as wrath, pride, covetousness, and deceit; the five *Avratas*, non-observance of positive commands, as lying, stealing, &c. and three *Yogas*, addiction or attachment of the mind, speech, and body to any act; *Kraiyas*, or acts, of which twenty-six varieties are specified as those performed with any part of the body, or with the instrumentality of a weapon, or the like—those prompted by feelings of hate or wrath—those which are inceptive, progressive, or conclusive—those performed by oneself, or through another creature—those which are suggested by impiety, or unbelief in the doctrine of the *Trithankáras*.

VI. The sixth *Tatwa* is termed *Samvara*, and is that by which acts are collected or impeded. There are fifty-seven varieties classed under six heads.

1. *Samiti*, keeping the attention properly alive, so as to see immediately if an insect is in the way, to refrain from uttering what should not be said, to distinguish any of the forty-two defects in food given as alms, taking or relinquishing any thing indifferently, and avoiding or abandoning unfit things.

2. *Gupti*, secrecy, or reserve of three kinds, or in mind, speech and person.

3. *Parishahá*, endurance or patience, as when a person has taken a vow of abstemiousness he must bear hunger and thirst; so he must endure heat and cold, when he practices the immoveable posture of *Jain* abstraction; if he is disappointed in what he has laboured or begged for, he must not murmur; and if he is reviled or even beaten, he must patiently submit.

4. *Yatidherma*, the duties of an ascetic, these are ten in number, patience, gentleness, integrity, and disinterestedness, abstraction, mortification, truth, purity, poverty, and continence.

5. *Bhávaná*, conviction or conclusion, such as that worldly existences are not eternal, that there is no refuge after death, that life is perpetually migrating through the eighty-four lakhs of living forms, that life is one or many: it also includes perception of the source whence evil acts proceed, and the like.

The sixth division of this class is *Cheritra*, practice or observance, of five sorts. *Sámáyika*, conventional, or the practice and avoidance of such actions as are permitted or prescribed. *Chhedopasthápaniya*, prevention of evil, as of the destruction of animal life. *Parihàravisuddhi*, purification by such mortification and penance as are enjoined by the exam-

ple of ancient saints and sages. *Sulkshmasamparáya*, the practises of those pious men who have attained a certain degree of eminence; and *Yathakhyátam*, the same after all the impediments and impurities of human nature are overcome or destroyed.

VII. *Nírjará*, the seventh *Tatwa*, is the religious practice that destroys mortal impurities, or, in other words, penance: it is of two kinds, external and internal; the first comprehends fasting, continence, silence, and bodily suffering; the second, repentance, piety, protection of the virtuous, study, meditation, and disregard, or rejection of both virtue and vice.

VIII. *Bandha* is the integral association of life with acts, as of milk with water, fire with a red hot iron ball: it is of four kinds—*Prakriti*, the natural disposition or nature of a thing—*Sthiti*, duration, or measure of time, through which life continues—*Anubhága*, feeling, or sensible quality —*Pradesa*, atomic individuality. The characters of this principle are illustrated by a *confection*. 1. According to its natural properties it cures phlegm, bile, &c.; 2, it remains efficient but for a given period; 3, it is sweet, bitter, sour, &c.; and 4, it is divisible into large or small proportions, retaining each the properties of the whole mass.

IX. The last of the nine principles is *Moksha*, or liberation of the vital spirit from the bonds of action: it is of nine sorts.

Satpadaprarúpana. The determination of the real nature of things, the consequence of a finite course of progress through different stages of being and purification. It is attainable only by living creatures of the highest order, or those having the five organs of sense; by those possessed of the *Trasakáya*, or a body endowed with consciousness and mobility; by those beings which are engendered, not self-produced; by those which

have reached the fifth *Charitre*, or exemption from human infirmity; by those which are in the *Kshayika Samyaktwa*, or that state of perfection in which elementary or material existence is destroyed; by those no longer requiring material existence; by those who have acquired the *Kevalajnána*, the only knowledge, and the *Kevala Dersana*, or only vision.

2. *Dravyapramána*, as regulated by the fitness of the things or persons to be emancipated.

3. *Kshetrapramána*, depending on the essentiality of certain holy places at which only it can be obtained.

4. *Spersana*, contact, or identity of the individuated living principle with that of the universe, or any part of it.

5. *Kála*, the times or ages at which emancipation is attainable; or the periods spent in various transmigrations.

6. *Antaram*, the difference of temperaments or dispositions.

7. *Bhága*, the existence of the imperishable part of all living bodies in which the purified essences or *Siddhas* reside.

8. *Bháva*, the nature or property of that pure existence which has attained the *Kevalajnána*, and other perfections essential to final liberation.

9. *Alpabahutwa*, the degree or ratio in which different classes of beings obtain emancipation.*

* Although termed मोक्षभेदाः in the original authorities, these varieties are rather in the requisite conditions for attaining *Moksha*, than in the kind or sort of emancipation attained.

From the details of these nine *Tatwas* the sum of the whole *Jain* system may be collected, but they form only the text on which further subtilties are founded, and they leave the end and scope of all the doctrine or the attainment of ultimate liberation singularly indistinct.

The *Moksha* of the *Jains* is exemption from the incidents of life, and above all from the necessity of being born again; but in what state the living principle subsists after it is so exempted, does not very satisfactorily appear. In one state indeed the bodily individuality remains, or that of *Jivanmukti*, liberation during life, whilst from most of the subdivisions of *Moksha*, it follows that the *Siddhas*, the pure existences, correspond with our notions of spiritual beings, having an impassive and inappreciable form, variable at will, capable of infinite contraction or dilation, and wholly void of feeling or passion. This is not incompatible with their enjoyment of *Nirván*, another term for *Moksha*, and which, as Mr. Colebroke observes, meaning literally, extinct or gone out as a fire, set, as a heavenly luminary, defunct as a saint who has passed away, implies profound calm. "It is not annihilation," he concludes, "but unceasing apathy which they, 'the *Jains* and *Buddhas*,' understand to be the extinction of their saints, and which they esteem to be supreme felicity worthy to be sought by practice of mortification as well as by acquisition of knowledge."

Besides the notions exhibited in the detail of the nine *Tatwas*, the *Jains* are known in controversial writings by the title *Saptabâdis*, or *Saptabhangis*, the *disputers* or *refuters* of seven positions: more correctly speaking, they are reconcilers, or could be so of seven contradictory assertions, evincing a sceptical character which justifies another epithet which they acknowledge, of *Syádbádis*, or assertors of possibilities: the seven positions are the following:

1, a thing is: 2—It is not: 3—It is and it is not: 4—It is not definable: 5—It *is*, but is not definable: 6—It is not, neither is it definable: 7—It is and it is not, and is not definable—Now these positions imply the doctrines of the different schools, the *Sánkhya*, *Vedánta*, and others, with regard to the world, to life, and to spirit, and are met in every case by the *Jains* with the reply, *Syádbâ, It may be so sometimes:* that is, whatever of these dogmas is advanced will be true in some respects, and not in others; correct under some circumstances, and not under others; and they are therefore not entitled to implicit trust, nor are they irreconcileable. There is one inference to be drawn from this attempt to reconcile the leading doctrines of the principal schools, of some importance to the history of the *Jain* doctrines, and it renders it probable that they were posterior to all the rest. As this reasoning however has been opposed by RÁMÂNUJA, it dates earlier than the twelfth century.

Liberation during life, and as a necessary consequence, exemption after it from future birth, implies the abandonment of eight classes of *Karmas*, or acts, four of which are noxious and four innoxious—they are all included under the *Tatwa*, *Pápa*, ILL, as above noticed, but are also more especially detailed. To the first order belong the following:

Jyanávarani, disregard of the various stages of knowledge, from simple comprehension to the only true wisdom, as so many steps to final liberation.

Dersanávarani, disbelief in the doctrines of the *Jain* Saints.

Mohani, hesitation in obeying the injunctions of the *Jain* code, or doubt as to their importance and the consequences of their neglect.

Antaráya, impeding or vexing those engaged in seeking liberation.

The second class comprises—

Vedaníya, self-consciousness or sufficiency.

Náma, pride of name—*Gotra*, pride of birth—and *Áyushka*, attachment to bodily existence.

These essential principles of the faith are common to all classes of *Jains*, but some differences occur in their *Duties* as they are divided into religious or lay orders, *Yatis* and *Srávakas*. Implicit belief in the doctrines and actions of the *Tírthankaras* is, of course, obligatory on both; but the former are expected to follow a life of abstinence, taciturnity, and continence, whilst the latter add to their moral and religious code, the practical worship of the *Tírthankaras*, and profound reverence for their more pious brethren. The moral code of the *Jains* is expressed in five *Mahávratas*, or great duties—Refraining from injury to life, truth, honesty, chastity, and freedom from worldly desires. There are four *Dhermas*, or merits—liberality, gentleness, piety, and penance; and three sorts of restraint—government of the mind, the tongue, and the person. To these are superadded a number of minor instructions or prohibitions, sometimes of a beneficial and sometimes of a trivial, or even ludicrous tendency, such as to abstain, at certain seasons, from salt, flowers, green fruit, and roots, honey, grapes, and tobacco; to drink water thrice strained; never to leave a liquid uncovered, lest an insect should be drowned in it; not to deal in soap, natron, indigo, and iron; and never to eat in the dark lest a fly should be swallowed. Religious characters wear a piece of cloth over their mouths to prevent insects from flying into them, and carry a brush under their arms to sweep the place

on which they are about to sit, to remove any ants or other living creatures out of the way of danger. Upon the whole, the doctrine of the *Jainas* is a system of quietism, calculated to render those who follow it perfectly innoxious, but to inspire them with apathetic indifference towards both this world and the next.

The ritual of the *Jains* is as simple as their moral code. The *Yati*, or devotee, dispenses with acts of worship at his pleasure, and the lay votary is only bound to visit daily a temple where some of the images of the *Tírthankaras* are erected, walk round it three times, make an obeisance to the images, with an offering of some trifle, usually fruit or flowers, and pronounce some such *Mantra*, or prayer, as the following—"*Namo Arihantánam, Namo Siddhánam, Namo Aryánám, Namo Upájyánám, Namo Löe Sabba Sahúnam*—Salutation to the *Arhats*, to the Pure Existences, to the Sages, to the Teachers, to all the Devout in the world." A morning prayer is also repeated—*Ichchhami khama Samano bandiyon, jo man jáye nisiáye; mathena bandámi*—I beg forgiveness, oh Lord, for your slave, for whatever evil thoughts the night may have produced—I bow with my head." The worshipper then perhaps remains to hear read, part of the *Kalpasútra* or *Bhaktámara*, or some narrative of one or other of the *Tírthankars*, and the devotion of their followers, and proceeds to his daily occupations.

The reader in a *Jain* temple is a *Yati*, or religious character; but the ministrant priest, the attendant on the images, the receiver of offerings, and conductor of all usual ceremonies, is a *Brahman*. It is a curious peculiarity in the *Jain* system, that they should have no priests of their own, but it is the natural consequence of the doctrine and example of the *Tírthankars*, who performed no rites, either vicariously or for themselves, and gave no instruction as to their observance. It shews also the true

character of this form of faith, that it was a departure from established practices, the observance of which was held by the *Jain* teachers to be matter of indifference, and which none of any credit would consent to regulate: the laity were, therefore, left to their former priesthood, as far as outward ceremonies were concerned.

The objects of worship are properly only the *Tírthankaras*, but the *Jains* do not deny the existence of the Hindu gods, and admit such of them as they have chosen to connect with the adventures of their saints, according to a classification of their own, to a share in the worship offered to their human superiors.

According to the Mythology which they have adopted and modified, the *Jains* reckon four classes of divine beings, whom they name *Bhuvanapatis*, *Vyantaras*, *Jyotishkas*, and *Vaimánikas*: the first comprises ten orders: the progeny of the *Asuras*, Serpents, *Garura*, *Dikpálas*, Fire, Air, the Ocean, Thunder and Lightning,—who are supposed to reside in the several hells or regions below the Earth. The second has eight orders, the *Pisáchas*, *Bhútas*, *Kinnaras*, *Gaudherbas*, and other monstrous or terrestrial divinities, inhabiting mountains, woods, and forests, as well as the lower regions, or air. The third has five orders—the Sun, Moon, Planets, Asterisms, and other heavenly bodies. The fourth, includes the Gods of present and past *Kalpas*. Of the first kind are those born in the Heavens, *Saudherma*, *Isána*, *Máhendra*, *Bráhma*, *Sanatkumára*, *Sukra*, and others to the number of twelve, or in the *Kalpas*, when SUDHERMA and the rest were severally presiding Deities. The last class reside in two divisions of five and of nine heavens—the five termed *Vijaya*, *Vaijayanti*, &c.; the second termed *Anúttara*, because there are none beyond them, as they crown the triple construction of the universe. In the sovereignty of the hosts of heaven, a great number of *Indras* are recognised, but of these two are

always specified as the chief, SUKRA and ISÂNA, one regent of the north, the other of the south heaven: the former alone has eighty-four thousand fellow gods, each of whom has myriads of associates and attendants.

Above all these rank in dignity, and as objects of worship, the twenty-four *Tírthankaras*, or with those of the past and of the future periods, Seventy-two. Allusion is made by HEMACHANDRA in his life of MAHÂVÍRA, to a hundred and one, and the same work specifies four *Sáswat* or eternal *Jinss*, RISHABHÂNANA, CHANDRÂNANA, VÁRISENA, and VERDDHAMÂNA—what is meant by them is not explained, and they are not recognised by all *Jains*.

The presence of Brahman ministrants, or the lapse of time and the tendency of the native mind to multiply objects of veneration, seems to have introduced different innovations into the worship of the *Jainas* in different parts of Hindustan; and in upper India the ritual in use is often intermixed with formulæ derived from the *Tantras*, and belonging more properly to the *Saiva* and *Sákta* worship. Images of the *Bhairavas* and *Bhairavís*, the fierce attendants on SIVA and KÁLI, take their place in *Jain* temples, and at suitable seasons the *Jains* equally with the Hindus address their adoration to SARASWATÍ and DEVI.*

In the South of India, from the account given by Colonel MACKENZIE, it appears that the *Jains* observe all the Brahminical *Sanskâras*, or essential

* Thus, in a *Púja paddhati*, procured at *Mainpuri*, where a *Jain* temple of considerable size stands, the *Tírthankaras*, as they are severally presented with offerings, are addressed; *Om Sri Rishabháya Swasti—Om Hrim hum:* and *Om Hrim Sri Sudharmáchárya, Adigurubhyo Nama—Om Hrim Hram, Samajinachaityalayebhyo Sri Jinendrabhyo nama.* There are also observances for regular Hindu festivals, as the *Sripanchami, Akshayatritiyá*, &c., when SARASWATI and other goddesses are invoked. Rules are given for the *Ghata Sthápana*, when SAKTI or DEVI is supposed to be present in a water jar, erected as her receptacle and emblem, and the *Sorasa Karana Pújá* ends with a *Lakshmi Stotra*, or Hymn, addressed to the Goddess of Prosperity.

ceremonies. This is not the case in Upper India, and the only rites followed are the Initiation of the infant, twelve days after birth by repeating a *Mantra* over it, and making a circular mark with the sandal and perfumes on the top of the head: Marriage and Cremation, which are much the same as those of the Brahmans, omitting the *Mantras* of the *Vedas*. *Sráddhas*, obsequial ceremonies at stated periods, are not performed by the *Jains* in Upper Hindustan.

The festivals of the *Jains* are peculiar to themselves, and occur especially on days consecrated by the birth or death of some of the principal *Tírthankaras*, especially the two last *Párswanáth* and *Verddhamána*: the places where these events occurred are also objects of pilgrimage, and very numerous assemblages of devout pilgrims occur at them at different seasons—thus in Behar, a very celebrated place of resort is the scene of *Párswanáth's* liberation; the mountain *Samet Sikhara*, or *Parasnáth*, near *Pashete*;* and another of equal sanctity, the scene of *Verddhamána's* departure from earth, is at *Pápapuri*, † in the same province. Pilgrims come from all parts of India to these places at all seasons, but the principal *Melas* are held at the former in *Mágh*, and in *Kártika*, at the latter. On the western side of India, the mountains of *Abu*, ‡ and *Girinar*, are the great scenes of pilgrimage, being covered with *Jain* temples and remains. RISHABHA DEVA and NEMINÁTH seem to be the favourite divinities in that quarter.

---

* Described very fully, as previously noticed in the Quarterly Magazine for December, 1827.

† It is also written *Apápapuri* and *Pavapuri*, under which latter name, it and other celebrated *Jaina* shrines in Behar, are described by a Native traveller, a *Jain*, in the service of Colonel MACKENZIE, in the Calcutta Magazine for June, 1823.

‡ See Asiatic Researches, vol. XVI. *Jain* Inscriptions at Abu.

Besides these particular festivals, the *Jains* observe several that are common to the Hindus, as the *Vasantayátrá*, or spring festival, the *Sripanchamí*, and others; they also hold in veneration certain of the Lunar days, as the 2d, 5th, 8th, 11th and 12th; on these no new work should be undertaken, no journey commenced, and fasting, or abstinence at least, and continence should be observed.

The origin of the *Jain* faith is immersed in the obscurity which invests all remote history amongst the Hindus. That it is the most recent of all the systems pursued in Hindustan is rendered highly probable by the extravagances in which it deals, by the doctrines it opposes to those of all other schools, and by the comparatively recent date of many *Jain* authors of celebrity and of numerous monumental reliques; but at what period it actually took its rise it is not easy to determine.* Mr. COLEBROOKE has suggested the probability of the *Jain* religion being the work of PÁRSWANÁTH, in the account of whom there is a nearer approach to sober history and credible chronology than in the narratives of his predecessors—this would throw back the origin of the *Jain* faith to

* Major DELAMAINE observes, "the usual idea of the *Jains* being a modern sect may not be erroneous: the doctrines originating with *Rishabha*, and continued by *Arhanta*, dividing at periods of schism into more distinct classes, of which the *Jains* or *Sráwacs*, as now established from one, and the modern *Buddhas*, as in *Burma*, *Siam*, *Ceylon*, *Tibet*, &c. another.—*Major Delamaine, T. R. A. S.* 1. 427. "Were I disposed to speculate on the origin of the *Jains*, from the striking coincidences of doctrine and religious usages between them and the *Bouddhists*, I should be led to conjecture that they were originally a set of Bouddhists."—*Mr. Erskine, Bombay Trans.* 3. 502. "It is certainly probable, as remarked by Dr. HAMILTON and Major DELAMAINE, that the *Gautama* of the *Jainas* and of the *Bauddhas*, is the same personage, and this leads to the further surmise that both these sects are branches of one stock.—Both have adopted the Hindu Pantheon, or assemblage of subordinate deities—both disclaim the authority of the *Vedas*, and both elevate their pre-eminent saints to divine supremacy—*Mr. Colebrooke, Trans. R. A. S.* 1. 521.

the ninth century before the Christian era, admitting the *Jain* chronology of VERDDHAMÂNA's existence, but it is difficult to concur in the accuracy of so remote a date, and whatever indirect evidence on the subject is procurable, is opposed to such a belief.

It has been supposed that we have notices of the *Jaina* sect as far back as the time of the Macedonian invasion of India, or at least at the period at which MEGASTHENES was sent ambassador to SANDRACOPTUS, and that these notices are recorded by STRABO and ARRIAN—the nature of the expressions which those and other writers have employed has been canvassed by Mr. COLEBROOKE, and shewn satisfactorily to establish the existence at that time of the regular Brahmans, as well as of other sects: what those sects were, however, it was no part of his object to enquire, and he has left it still to be ascertained how far it can be concluded that the *Jainas* were intended.

Much perplexity in the Greek accounts of the Brahmans and Gymnosophists has, no doubt, occurred from their not having been acquainted with the subdivision of the priestly cast into the four orders of student, householder, hermit, and mendicant, and therefore they describe the Brahman sometimes as living in towns, sometimes in woods, sometimes observing celibacy, and sometimes married, sometimes as wearing clothes, and sometimes as going naked; contradictions which, though apparently irreconcileable if the same individuals, or classes be meant, were appreciated by the shrewdness of BAYLE more justly than he was himself aware of, * and are all explained by the *Achâras*, or institutes of the

* "It may be that they 'the Brachmanes did not follow the same institute in all ages, and that with a distinction of time one might reconcile some of the variations of the authors who have spoken of them."—Article Brachmans, Note C. Harris, (1. 454) also has rightly estimated the real character of the Germanes, and concluded that they were nothing but Gioghis, from Pietro della Valle's description of the latter.

Hindus, as affecting the various periods of life and corresponding practices of Brahmanical devotion.

As far, therefore, as the customs or observances of the Gymnosophists are described, we have no reason to conclude that any but the followers of the *Vedas* are intended, and the only part of the account applicable to any other sect is the term *Germanes*, or *Sermanes*, or *Samanæans*, applied to one division of the Sophists or Sages. This name, as Mr. COLEBROOKE observes, seems to bear some affinity to the *Sramanas*, or asceticks of the *Jains* or *Bauddhas*, but we can derive no positive conclusion from a resemblance, which may possibly be rather imaginary than real, and the object of which, after all, is far from being the individual property of any sect, but is equally applicable to the ascetic of every religious system. As distinct from the Brahmans, the *Sarmanes* will be equally distinct from the *Jains*; for the Brahmans, it is said by PORPHYRY, are of one race; and the *Samanæans* are selected from all the tribes, and consist of persons choosing to prosecute divine studies, precisely the independent *Sanyási* or *Gosain*, of modern times, few persons of which description belong to the order of the *Brahmans*, or are united with the rest by any community of origin or peculiarity of faith.

Again, another *word* has been adduced in corroboration of the existence of the *Jains*, and it may be admitted, that this is a better proof than the preceding, as the *Pramnæ* are declared to be the opposers of the Brahmans, which is no where mentioned of the *Sarmanes*. This expression is said to designate the *Jains*, but this is far from certain: the term is probably derived from *Pramána*, proof, evidence, and is especially the right of the followers of the logical school, who are usually termed *Prámánikas:* it is applicable, however, to any sect which advocates positive or occular proof in opposition to written dogmas, or belief in scriptural authority, and is in that sense more correctly an epithet of the

Bauddha sectaries than of the *Jains*, who admit the legends and worship the deities of the *Purânas*, and who hold it the heighth of impiety to question the written doctrines of their own teachers. The proofs from classical writers, therefore, are wholly inadequate to the decision of the antiquity of the *Jains*, and we are still entirely left to sources of a less satisfactory description.

All writers on the *Jains*, entitled to our attention, agree in admitting an intimate connexion between them and the *Bauddhas;* the chief analogies have been above adverted to, and the inference of later origin is justly founded on the extravagant exaggerations of the system adopted by the *Jains*. Their identity of origin rests chiefly upon the name of GAUTAMA, which appears as that of VERDDHAMÂNA's chief pupil, and as the legislator of the *Bauddha* nations in the east. The dates also assigned to both are not far removed; the apotheosis of the *Buddha*, GAUTAMA, occurring five hundred and forty-three years before Christ, and the death of MAHÂVIRA, the preceptor of the *Jain* GAUTAMA, about the same time. That there is some connexion may be conceded, but for reasons already assigned, it is not likely that the persons are the same; the *Jains* have not improbably derived their GAUTAMA from that of their predecessors.

No argument for the antiquity of the *Jains* is derivable from the account given of RISHABHA in the *Bhâgavat Purâna*. He was not a seceder from the true faith, although the mistaken imitation of his practices is said to have led others into errors, evidently intending the *Jain* heresy. He is scarcely identifiable, in consequence, with the *Jain* RISHABHA, the first of the *Tírthankaras;* but even if that were the case, no confidence could be placed in the authority, as the work is a modern compilation, not exceeding, at the most, twelve centuries of antiquity. The refutation of *Jain* doctrines in the *Brahma Sûtras*, is a less questionable testimony of their early existence; but the date of that work is to

be yet ascertained. SANKARA ACHÁRYA, the commentator on the texts of VYÁSA, affords a more definite approximation; but he will not carry us back above ten centuries. It is also to be observed, that the objects of the attacks of the *Sútras* and of SANKARA are philosophical and speculative tenets, and these may have been current long before they formed part of a distinct practical system of faith, as promulgated by a class of *Bauddhas*, the germ of the *Jains*.

However, we may admit from these authorities the existence of the *Jains* as a distinct sect, above ten or twelve centuries ago; we have reason to question their being of any note or importance much earlier. The *Bauddhas*, we know from CLEMENS of Alexandria, existed in India in the second century of the Christian æra, and we find them not only the principal objects of Hindu confutation and anathema, but they are mentioned in works of lighter literature, referable to that period, in which the *Jains* are not noticed, nor alluded to: the omission is the more worthy of notice, because, since the *Bauddhas* disappeared from India, and the *Jains* only have been known, it will be found that the Hindu writers, whenever they speak of *Bauddhas*, shew, by the phraseology and practices ascribed to them, that they really mean *Jains:* the older writers do not make the same mistake, and the usages and expressions which they give to *Bauddha* personages are not *Jain*, but *Bauddha;* with the one they were familiar, the other were yet unknown.

The literature of the *Jains* themselves is unfavourable to the notion of high antiquity. HEMACHANDRA, one of their greatest writers, flourished in the end of the twelfth century, and the compiler of the *Jain Puránas* of the *Dekhin*, is said to have written at the end of the ninth. The *Kalpa Sútra* professes to have been composed nine hundred and eighty years after the death of MAHÁVÍRA, or fifteen centuries ago; but from internal

evidence, it could not have been composed earlier than the twelfth or thirteenth century. Various eminent *Jain* authors were cotemporary also with MUNJA and BHOJA, princes of *Dhár*, in the ninth and tenth century, and a number of works seem to have been compiled in the sixteenth century, during the tolerant reign of AKBER.

Of the progress of the *Jain* faith in the Gangetic provinces of Upper India, we have no very satisfactory traces. It may be doubted if they ever extended themselves in Bengal. Behar, according to their own traditions, was the birth place of VERDDHAMÁNA, and Benares of PÁRSWANÁTH; and temples and monuments of their teachers are common in both; particularly the former; but all those now existing are of very recent dates,* and there are no vestiges referable to an intermediate period between the last *Tírthankara*, and the eighteenth century. At Benares, its princes professed the faith of *Bauddha* as late as the eleventh century, whilst during the same period, as is proved by inscriptions and the historical work of CHANDRAKAVI, the sovereigns of Kanoj and Delhi were of the orthodox persuasion. It is very doubtful, therefore, if the *Jains* ever formed a leading sect in this part of Hindustan. They were more successful in the west and south.

In Western Marwar, and the whole of the territory subject to the *Chaulukya* princes of Guzerat, the *Jain* faith became that of the ruling dynasty; but this occurred at no very remote period. The Mohammedan Geographer, EDRISI, states that the king of *Nehrwala*, the capital of Guzerat, worshipped BUDDHA; and we know from the writings of

* As late even as the eighteenth and nineteenth centuries.—These dates are sometimes said to indicate the periods at which the temples were repaired, but the intelligent author of the 'Visit to Mount *Parswanath*' observes, "only in one instance is there reason to suspect that the buildings are much older than the inscriptions announce. The most ancient Mundir at that place, is reckoned to be but fifty years old.—*Calcutta Magazine, December*, 1827.

HEMACHANDRA, that he was the apostle of the *Jain* faith in that kingdom—converting KUMÁRA PALA, the monarch of Guzerat, to his creed. This is also an occurrence of the twelfth century, or about 1174. The consequences of this conversion are still apparent in the abundant reliques of the *Jain* faith, and the numbers by whom it is professed in Marwar, Guzerat, and the upper part of the Malabar Coast.

On the Coromandel side of the Peninsula, the *Jains* were introduced upon the downfall of the *Bauddhas*, in the reign of AMOGHAVERSHA, king of *Tonda Mandalam*, in the ninth century, or according to some traditions, in the eighth. Farther south, in Madura, the date of their introduction is not known, but they were in power in the eleventh century under KUNA PÁNDYA. In this, and in the twelfth, they seem to have reached their highest prosperity, and from that period to have declined. KUNA PÁNDYA became a *Saiva*—VISHNU VERDDHANA, Raja of Mysore, was converted from the *Jain* to the *Vaishnava* faith in the twelfth century, and about the same time the *Lingavant Saivas* deposed and murdered VIJALA, the *Jain* king of *Kalyán*. The sect, however, continued to meet with partial countenance from the kings of *Vijayanagar*, until a comparatively modern date.

The conclusions founded on traditionary or historical records are fully supported by the testimony of monuments and inscriptions—the latter of which are exceedingly numerous in the south and west of India. Most of these are very modern—none are earlier than the ninth century. An exception is said to exist in an inscription on a rock at *Belligola*, recording a grant of land by *Chámunda Raya* to the shrine of GOMATISWARA, in the year 600 of the *Kali* age, meaning the *Kali* of the *Jains*, which began three years after the death of VERDDHAMANA. This inscription, therefore, if it exists, was written about fifty or sixty years before the Christian æra—but it is not clear that any such record is in existence,

the fact resting on the oral testimony of the head Pontiff at *Belligola:* even, if it be legible on the face of the rock, it is of questionable authenticity, as it is perfectly solitary, and no other document of like antiquity has been met with.

The MACKENZIE Collection contains many hundred *Jain* inscriptions. Of these, the oldest record grants made by the princes of *Homchi*, a petty state in *Mysur*. None of them are older than the end of the ninth century. Similar grants, extending through the eleventh and twelfth centuries by the VELALA sovereigns of *Mysur*, are also numerous, whilst they continue with equal frequency to the sixteenth and seventeenth centuries, during the existence of the sovereignty of *Vijayanagar*. Again, at *Abu*, under the patronage of the Guzerat princes, we have a number of *Jain* inscriptions, but the oldest of them bears date *Samvat* 1245, (A.D. 1189);* they multiply in the thirteenth and fourteenth centuries, and are found as late as the middle of the eighteenth—and, finally, in *Magadha*, the scene of VERDDHAMÂNA's birth and apotheosis, the oldest inscriptions found, date no further back than the beginning of the sixteenth century.†

From all credible testimony, therefore, it is impossible to avoid the inference that the *Jains* are a sect of comparatively recent institution, who first came into power and patronage about the eighth and ninth century: they probably existed before that date as a division of the *Bauddhas*, and owed their elevation to the suppression of that form of faith to which

---

* Asiatic Researches, Vol. XVI. Page 317.

† Dr. HAMILTON's Description of Jain Temples in Behar.—*Trans. R. A. S.* I. 525. To these may be added the inscriptions at *Parswanath*, and a number of inscriptions at *Gwalior*, copies of which were sent to Mr. FRASER, and which are all dated in the middle of the 15th century.

they contributed. This is positively asserted by the traditions of the south in several instances: the *Bauddhas* of *Kánchi* were confuted by AKALANKA, a *Jain* priest, and thereupon expelled the country. VARA PANDYA, of *Madura*, on becoming a *Jain*, is said to have persecuted the *Bauddhas*, subjecting them to personal tortures, and banishing them from the country. In *Guzerat*, *Bauddha* princes were succeeded by the *Jains*. There is every reason to be satisfied, therefore, that the total disappearance of the *Bauddhas* in India proper is connected with the influence of the *Jains*, which may have commenced in the sixth or seventh centuries, and continued till the twelfth.

The inveteracy prevalent between kindred schisms is a sufficient reason for any enmity felt by the *Jains* towards the *Bauddhas*, rather than towards the Brahmanical Hindus. There is, indeed, a political leaning to the latter, observable in their recognition of the orthodox Pantheon, in the deference paid to the *Vedas*, and to the rites derivable from them, to the institution of castes, and to the employment of Brahmans as ministrant priests. They appear also to have adapted themselves to the prevailing form of Hinduism in different places: thus at *Abu*, several *Jain* inscriptions commence with invocations of SIVA,* and in the *Dekhin*, an edict promulgated by BUKKA RÁYA, of *Vijayanagar*, declares there is no real difference between the *Jains* and *Vaishnavas*.† In some places the same temples are resorted to by *Jains* and *Rámánujiya Vaishnavas*, and as observed by Mr. COLEBROOKE, a *Jain* on renouncing the heretical doctrines of his sect, takes his place amongst the orthodox Hindus as a *Kshetriya* or *Vaisya*, which would not be the case with a convert, who has not already caste as

* Major DELAMAINE notices that the mountain *Girnár*, is equally sacred to *Hindus* as to *Jains*, and that an ancient temple of MAHADEVA is erected there.

† Asiatic Researches, Vol. IX. Page 270.

a Hindu.* In the South of India, indeed, the *Jains* preserve the distinction of castes: in Upper India, they profess to be of one caste, or *Vaisyas*. It is very clear, however, that admission to the *Jain* communion was originally independent of caste,† and the partial adoption of it or pretension to it, is either a spontaneous or politic conformity to the strong feeling on the subject which prevails amongst all Hindus.

These are the great outlines of the rise and progress of the sect, as derivable from sources entitled to credit; but the *Jains* have amongst themselves records of sectarial value, detailing the succession of different teachers, and the origin of various heresies. Some extracts from one of these attached to a copy of the *Kalpa Sútra*, may be acceptable.

The succession of teachers is always deduced from MAHÂVÍRA, through his disciple SUDHERMA. Of the rest, all but GAUTAMA died before their Master, as has been observed above, and GAUTAMA survived him but a month, which he spent in penance and fasting. SUDHERMA, therefore, was the only one who remained competent to impart instruction. His pupil was JAMBUSWÂMÍ, the last of the *Kévalís*, or possessors of true wisdom: six teachers follow, termed *Srúta Kévalís*, or hearers of the first masters, and then seven others, *Dasapúrvís*, from having been taught the works so named.‡ These are common to all the lists when correct.

---

* Transactions Royal Asiatic Society, I. 549.

† MAHÂVÍRA himself was the son of a king, and should therefore be a *Kshetríya*. His chief disciples, INDRABHUTI and the rest, were *Brahmans*. His especial attendant, GOSÂLA, was an outcaste, and his followers, of both sexes, were of every caste.

‡ The following are the names of the individuals alluded to in the text:

SRUTAKEVALÍS.	DASAPÚRVÍS.
Prabhava Swámí	*Arya Mahágiri Súrí.*
Sayyambhadra Súrí.	*Arya Suhasti Súrí.*
Yasobhadra Súrí.	*Arya Susthita Súrí.*
Sambhuta Vijaya Súrí.	*Indradinna Súrí.*
Bhadrabáhu Súrí.	*Dinna Súrí.*
Sthúlabhadra Súrí.	*Sinhagiri Súrí.*
	Vajraswámí Súrí.

In the *Belligola* list they are omitted, and the successor of JAMBUSWÂMÎ is there named VERASÍNA, who may have been, as Mr. COLEBROOKE remarks, a hundred degrees removed. The lists, subsequently, vary according to the particular line of descent to which they belong.

Of these persons, the second *Srutakevalí* is reputed to be the author of the *Dasavaikaliká*, one of the standard works of the sect. SUHASTI, the second *Dasapúrvi*, was the preceptor of SAMPRATI RAJA, and the fourth SUSTHITA, founded the *Kote gachcha*, or tribe. VAJRASWÂMÎ the last, established a particular division called the *Vájra Sákhá*.

Of the succeeding teachers, or *Súris*, the title borne by the spiritual preceptors of the *Jains*, CHANDRASÚRI the second, is the founder of the family of that name, eight hundred and nine years, it is said, after the emancipation of MAHÁVÍRA. In his time, it is stated, the *Digambaras* arose; but we have seen that they were at least cotemporary with MAHÁVÍRA.

The 38th on the list, from MAHÁVIRA inclusive, UDYOTANA SÚRI first classed the *Jains* under eighty-nine Gachchas. The 40th JINESWARÎ who lived A. D. 1024, founded the *Khertara* family.* With the 44th, JINADATTA originated the *Oswal* family, and the *Madhyakhertara* branch; he was a teacher of great celebrity, and impressions of his feet in plaster or on stone are preserved in some temples, as at *Bhelupur* in Benares; he lived in 1148. Other divisions, either of a religious or civil nature, are attributed to various teachers, as the *Chitrabala Gachcha* to JINAPATI *Súri*, in A. D. 1149;

* Major TOD gives a somewhat different account of the origin of this tribe. *Khartra*, he says means true, an epithet of distinction which was bestowed by that great supporter of the *Buddhists* or *Jains*, SIDRAJ, King of *Anhulwara Paten*, on one of the branches *Gachcha*, in a grand religious disputation at the capital, in the eleventh century. The accounts are by no means incompatible, and my authority represents *Jineswarí* victorious in a controversy.

the *Anchalika* doctrine to JINESWARA in 1160; the *Laghu Khertara* family to JINACHANDRA in 1265; another JINACHANDRA, the 61st in the list, was cotemporary with AKBER. The list closes with the 70th *Jina*, HERSHA SÚRI, with whom, or his pupils, several works originated in the end of the seventeenth century.*

Admitting this record to have been carefully preserved, we have seventy-one persons from MAHÂVÍRA, to whom a period of less than fourteen centuries can scarcely be assigned, and whose series would, therefore, have begun in the third century. It is not at all unlikely that such was the case, but no positive conclusion can be drawn from a single document of this nature: a comparison with other lists is necessary, to determine the weight to be attached to it as an authority.

The *Jains* are divided into two principal divisions, *Digambaras* and *Swetambáras*; the former of which appears to have the best pretensions to antiquity, and to have been most widely diffused.† The discriminating difference is implied in these terms, the former meaning the *Skyclad*, that is, naked, and the latter the white robed, the teachers being so dressed. In the present day, however, the *Digambara* ascetics do not go naked, but wear coloured garments; they confine the disuse of clothes to the period of their meals, throwing aside their wrapper when they receive the food given them by their disciples: the points of difference between the

---

* HEMACHANDRA, at the end of the *Mahâvîra Cheritra*, after stating that VAJRÁSWÁMI founded the VAJRASÁKHÁ, which was established in the *Chandra Gachcha*, gives the teachers of that family down to himself, YASOBHADRA, PRADYUMNA, VISWASENA, DEVACHANDRA, and HEMACHANDRA.

† All the *Dekhini Jains* appear to belong to the *Digambara* division. So it is said do the majority of the *Jains* in Western India. In the early philosophical writings of the Hindus, the *Jains* are usually termed *Digambaras*, or *Nagnas*, naked. The term *Jain* rarely occurs, and *Swetambara* still more rarely if ever, as observed in the text; also VERDHAMÁNA, practically at least, was a *Digambara*.

two sects are far from restricted to that of dress, and comprehend a list of no fewer than seven hundred, of which eighty-four are regarded as of infinite importance: a few of these may be here noticed.

The *Swetámbaras* decorate the images of the *Tírthankaras* with earrings, necklaces, armlets, and tiaras of gold and jewels: the *Digambaras* leave their images without the foreign aid of ornament.

The *Swetámbaras* assert that there are twelve heavens, and sixty-four *Indras*: the *Digambaras* maintain that there are sixteen heavens, and one hundred Olympian monarchs.

The *Swetámbaras* permit their *Gurus* to eat out of vessels: the *Digambaras* receive the food in their open hands from their disciples.

The *Swetámbaras* consider the accompaniments of the brush, water-pot, &c., as essential to the character of an ascetic: the *Digambaras* deny their importance.

The *Swetámbaras* assert that the *Angas*, or scriptures, are the work of the immediate disciples of the *Tírthankaras*: the *Digambaras*, with more reason, maintain that the leading authorities of the *Jain* religion are the composition of subsequent teachers or *Acháryas*.

The advantage gained by the *Digambaras*, in the last debateable matter, they lose, it is to be apprehended, in the next, when they assert that no woman can obtain *Nirván*, in opposition to the more gallant doctrine of their rivals, which admits the fair sex to the enjoyment of final annihilation.

These will be sufficient specimens of the causes of disagreement that divide the *Jainas* into two leading branches, whose mutual animosity is, as usual, of an intensity, very disproportionate to the sources from whence it springs.

Besides these two great divisions, several minor sects are particularised as existing amongst the *Jains*. They appear, however, to be of no importance, as it has been found impossible to obtain any satisfactory account of the heresies they have adopted, or of their origin and present condition. Schism was contemporary even with MAHÁVÍRA, and his son-in-law, JÁMÁLI, founded a dissentient order. His follower, GOSÁLA, was also the institutor of a sect, and an impostor into the bargain, pretending to be the twenty-fourth *Tírthankara*. BAJRABANDA, the pupil of a very celebrated *Digambara* teacher, KUNDA KUND ÁCHÁRYÁ, founded the *Drávír* sect, according to some in the fifth, and to the others, in the seventh century. VAJRASWÁMÍ instituted the *Mahánisítha* sect, and JINENDRA SÚRI founded the *Lampaka* sect, by which images were discarded. The sects now most often heard of, although little known, are the *Múla Sanghis*, who use brushes of peacock's feathers, wear red garments, and receive alms in their hands: the *Káshta Sanghis*, who make their images of wood and employ brushes of the tail of the *Yak*: the *Tera Panthis* and *Bís Panthis*, or followers of ten and of twenty, said sometimes to refer to the number of objects which are most essential to salvation, and at others, explained by a legend of the foundation of the heresy by a number of persons, such as the denomination implies. Both these are said to deny the supremacy of a *Guru*, to dispense with the ministration of a *Brahman*, and to present no perfumes, flowers, nor fruits to the images of the *Tírthankaras*.* The

* The *Bís Panthis* are said to be, in fact, the orthodox *Digambaras*, of whom the *Tera Panthis* are a dissenting branch.

Bishana Panthis carry their aversion to external emblems still farther, and discard the use of images altogether. The *Dundiyas* and *Samvégis* are religious orders: the former affect rigorous adherence to the moral code, but disregard all set forms of prayer or praise, and all modes of external worship: the *Samvégis* follow the usual practices, but subsist upon alms, accepting no more than is indispensable for present wants.

The whole of the *Jains* are again distinguished into clerical and lay, or into *Yatis* and *Srávakas*: the former lead a religious life, subsisting upon the alms supplied by the latter. According to the greater or less degree of sanctity to which they pretend, are their seeming purity and outward precision, shewn especially in their care of animal life: they carry a brush to sweep the ground before they tread upon it; never eat nor drink in the dark, lest they should inadvertently swallow an insect, and sometimes wear a thin cloth over their mouths lest their breath should demolish some of the atomic ephemera that frolic in the sunbeams; they wear their hair cut short, strictly they should pluck it out by the roots; they profess continence and poverty, and pretend to observe frequent fasts and exercise profound abstraction. Some of them may be simple enthusiasts; many of them, however, are knaves, and the reputation which they enjoy all over India, as skilful magicians, is not very favourable to their general character: they are, in fact, not unfrequently *Charlatans*, pretending to skill in palmistry and necromancy, dealing in emperical therapeutics, and dabbling in chemical, or rather alchemical manipulations. Some of them are less disreputably engaged in traffic, and they are often the proprietors of *Maths* and temples, and derive a very comfortable support from the offerings presented by the secular votaries of *Jina*. The *Yatis*, as above remarked, never officiate as priests in the temples, the ceremonies being conducted by a member of the orthodox priesthood, a *Brahman*, duly trained for the purpose. The *Yatis* are sometimes collected in *Maths*, called by them

Posálas, and even when abroad in the world, they acknowledge a sort of obedience to the head of the *Posála* of which they were once members.

The secular members of the *Jaina* religion, or *Srávakas*, follow the usual practices of the other Hindus, but give alms only to the *Yatis*, and present offerings and pay homage only to the *Tírthankaras;* the present worship, indeed, is almost restricted to the two last of these personages, to PÁRSWANATH, as commonly named *Parisnath*, the twenty-third, and to VERDDHAMÁNA or MAHVÍRA SWAMI, the twenty-fourth *Tírthankara* of the present age. The temples of these divinities are, in general, much handsomer buildings than those of the orthodox Hindus: they consist of a square or oblong room, large enough to admit a tolerably numerous assemblage, surrounded by an open portico: on one side is a sort of altar-piece of several stages; on the centre of the upper tier sits the chief deity of the temple, supported by two other *Arhats*, whilst the rest, or a portion of them, are ranged upon the inferior tiers: the steeple is also distinguishable from that of other temples, being formed of departments, which are intended, apparently, to represent leaves, and surmounted by a pole resembling a flag staff, terminating in a gilt knob: there are several of these temples in the chief cities along the Ganges, and no fewer than a dozen in *Murshedabad*, to which the circumstance of the *Set* family, being of the *Jaina* persuasion, attracted a number of fellow worshippers. In Calcutta there are four temples, two belonging to each sect. In Behar are the temples of PÁRISNÁTH and the *Pádúkas*, or feet of VERDDHÁMANA, and VÁSUPÚJYA. Benares possesses several temples, one of which, in the suburb, called *Belupura*, is honoured as the birth place of PÁRSWANÁTH. The shrine comprises two temples, one belonging to the *Swetámbaras*, and one to the *Digambaras*. A temple of some size and celebrity occurs at *Mainpuri*, in the Doab, and most of the towns in that direction present *Jain* spires. The chief temples, however, are to the

westward, and especially at *Jaypur*. The whole of *Mewar* and *Márwar* is strewed with remains of the sacred edifices of this sect.

The *Jains* of the South of India, as has been observed, are divided into castes: this is not the case in Upper Hindustan, where they are all of one caste, or, which is the same thing, of none. They are nevertheless equally tenacious of similar distinctions, and not only refuse to mix with other classes, but recognise a number of orders amongst themselves, between which no intermarriages can take place, and many of whom cannot eat together. This classification is the *Gachcha* or *Got*, the family or race, which has been substituted for the *Verna*, the *Játi*, or caste. Of these *Gachchas*, or family divisions, they admit eighty-four,* and these

* The following are the appellations of the eighty-four *Gachchas*:

Khandewál.	*Natíla.*	*Dhaktha.*	*Bikriya.*
Porwál.	*Mothiya.*	*Vaisya.*	*Bidyabya.*
Agarwál.	*Tattora.*	*Nágdhár.*	*Bersári.*
Jaiswál.	*Bágerwál.*	*Por.*	*Astaki.*
Barhíya.	*Harsola.*	*Surendra.*	*Ashtadhár.*
Golál.	*Sriguru.*	*Kadaya.*	*Pawarábhi.*
Gajapúrbi.	*Jolura.*	*Káhari.*	*Dhakkachála.*
Srimál.	*Gahakhanduja.*	*Soniya.*	*Bogosrí.*
Banswál, or Oswál.	*Chordiya.*	*Sorathiya.*	*Naraya.*
Porwár.	*Bhungeriwál.*	*Rájiya.*	*Korgháriya.*
Palliwál.	*Brahmatá.*	*Maya.*	*Bamáriya.*
Danderwál.	*Beduja.*	*Kammeha.*	*Séksantánya.*
Himmárgujeráti.	*Báhariya.*	*Bhangela.*	*Anándi.*
Baramora.	*Goguwál.*	*Gangarda.*	*Nágóra.*
Kharawa.	*Andaluja.*	*Márkeya.*	*Tattora.*
Labechu.	*Gogayya.*	*Motwál.*	*Pákhastya.*
Khandoya.	*Mandaluja.*	*Swetwál.*	*Sacchora.*
Katinora.	*Pancham.*	*Chakkichap.*	*Jannorá.*
Kabliya.	*Somabansibogar.*	*Khandarya.*	*Nemilára.*
Kapola.	*Chatúrtha.*	*Narischya.*	*Gandoriya.*
Natíla.	*Hardar.*	*Bimongai.*	*Dhawaljóti.*

Some of these are well known, but many of the others are never met with. The list was furnished by a respectable *Yati*—but how far it is throughout genuine, I cannot pretend to say. It omits several *Gachchas* of celebrity, particularly the *Chandra* and *Khertara*.

again appear to comprehend a variety of subdivisions: some of the *Gachchas* comprehend a portion of *Sri Vaishnavas*, between which sect and the *Jains* in Upper India, a singular alliance seems sometimes to prevail.

The condition of *Jaina* worship may be inferred from the above notices of its temples. Its professors are to be found in every province of Hindustan, collected chiefly in towns, where, as merchants and bankers, they usually form a very opulent portion of the community. In Calcutta there are said to be five hundred families; but they are much more numerous at *Murshedabad*. In *Behar* they have been estimated at between three and four hundred families. They are in some numbers in *Benares*, but become more numerous ascending the *Doab*. It is, however, to the westward that they abound: the provinces of *Meiwar* and *Márwar* being apparently the cradle of the sect.* They are also numerous in *Guzerat*, in the upper part of the Malabar coast, and are scattered throughout the Peninsula. They form, in fact, a very large, and from their wealth and influence, a most important division of the population of India.

BÁBA LÁLIS.

The followers of BÁBA LÁL are sometimes included amongst the *Vaishnava* sects, and the classification is warranted by the outward seeming of these sectaries, who streak the forehead with *Gopichandana*, and profess a veneration for RÁMA: in reality, however, they adore but one God, dispensing with all forms of worship, and directing their devotion by rules and objects derived from a medly of *Vedánta* and *Sufi* tenets.

* According to Major TOD, the Pontiff of the *Khartra Gachcha* has eleven thousand clerical disciples scattered over India, and the single community of *Oswal* numbers one hundred thousand families. In the West of India, the officers of the state and revenue, the bankers, the civil magistrates, and the heads of corporations, are mostly *Jains*.—*Trans. R. As. Soc. vol.* II. *p.* 1 263.

BÁBA LÁL was a *Khetriya*, born in *Malwa*, about the reign of JEHANGIR: he early adopted a religious life under the tuition of CHETANA SWÁMÍ, whose fitness as a teacher had been miraculously proved. This person soliciting alms of BÁBA LÁL, received some raw grain, and wood to dress it with: lighting the wood, he confined the fire between his feet, and supported the vessel in which he boiled the grain upon his insteps, BÁBA LÁL immediately prostrated himself before him as his *Guru*, and receiving from him a grain of the boiled rice to eat, the system of the universe became immediately unfolded to his comprehension. He followed CHETANA to *Lahore*, whence being dispatched to *Dwáraká* by his *Guru*, to procure some of the earth, called *Gopichandana*, he effected his mission in less than an hour: this miraculous rapidity, the distance being some hundred miles, attesting his proficiency, he was dismissed by his *Guru*, in order to become a teacher. He settled at *Dehanpur*, near *Serhind*, where he erected a *Math*, comprehending a handsome temple, and where he initiated a number of persons in the articles of his faith.

Amongst the individuals attracted by the doctrines of BÁBA LÁL, was the liberal minded and unfortunate DARA SHEKOH: he summoned the sage to his presence to be instructed in his tenets, and the result of seven interviews was committed to writing, in the form of a dialogue between the Prince and the *Pír*, by two literary Hindus, attached to the Prince's train, one YADU DÁS, a *Khettriya*, and the other RAICHAND *Brahman*, the latter the *Mirmunshi*; the interview took place in the garden of JAFFER KHAN SADUH, in the 21st year of SHAH JEHAN's reign, or 1649: the work is entitled *Nádir unnikát*, and is written, as the name implies, in the Persian language. Some miscellaneous extracts from it may not be unacceptable, as they may not only explain the tenets of BÁBA LÁL, and something of the *Vedánta* and *Sufi* doctrines, but may illustrate better than any description the notions generally prevailing of the duties of a religious and mendicant life. The interrogator is the Prince, BÁBA LÁL himself the respondent.

What is the passion of a Fakir?—Knowledge of God.

What is the power of an Ascetic?—Impotence.

What is Wisdom?—Devotion of the heart to the Heart's Lord.

How are the hands of a Fakir employed?—To cover his ears.

Where are his feet?—Hidden, but not hampered by his garments.

What best becomes him?—Vigilance, night and day.

In what should he be unapt?—Immoderate diet.

In what should he repose?—In a corner; seclusion from mankind, and meditation on the only True.

What is his dwelling?—God's creatures.

His Kingdom?—God.

What are the lights of his mansion?—The Sun and Moon.

What is his couch?—The Earth.

What is his indispensable observance?—Praise and glorification of the Cherisher of all things, and the needer of none.

What is suitable for a Fakir?—*Lá*, none; as *Lá Allah*, &c. there is no God but God.

How passes the existence of a Fakir?—Without desire, without restraint, without property.

What are the duties of a Fakir?—Poverty and faith.

Which is the best religion?—Verse, "The Creed of the lover differs from other Creeds. God is the faith and creed of those who love him, but to do good is best for the follower of every faith." Again, as HAFIZ says—

> The object of all religions is alike,
> All men seek their beloved,
> What is the difference between prudent and wild,
> All the world is love's dwelling,
> Why talk of a Mosque or a Church.

With whom should the Fakir cultivate intimacy?—With the Lord of loveliness.

To whom should he be a stranger?—To covetousness, anger, envy, falsehood, and malice.

Should he wear garments or go naked?—The loins should be covered by those who are in their senses—nudity is excusable in those who are insane. The love of God does not depend upon a cap or a coat.

How should a *Fakir* conduct himself?—He should perform what he promises, and not promise what he cannot perform.

Should evil be done to evil doers?—The *Fakir* is to do evil to none, he is to consider good and ill alike, so HAFIZ says—"The repose of the two worlds depends upon two rules, kindness to friends and gentleness to foes."

What is the nature of the *Takia* (the pillow or abbacy?)—To commence with a seat upon it is improper, and at all times an erratic life is preferable; when the body is weakened by age or sickness, the *Fakir* may then repose upon his pillow: so situated, he should welcome every *Fakir* as his guest, and consider nothing but God to be his own.

Is it necessary for a *Fakir*, to withdraw from the world?—It is prudent but not necessary: the man in society who fixes his heart on God is a *Fakir*, and the *Fakir* who takes an interest in the concerns of men is a man of the world, so MAULANA RUM observes—"What is the world? forgetfulness of God, not clothes, nor wealth, nor wife, nor offspring."

What is the difference between nature and created things?—Some compare them to the seed and the tree. The seed and the tree are equivalent though related; although the same in substance, they are not necessarily co-existent nor co-relative. They may be also compared to the waves and the sea; the first cannot be without the second, but the sea may be without waves, wind is necessary to their product: so, although nature and created things are of one essence, yet the evolution of the latter from the former requires the interference of an evolving cause, or the interposition of a Creator.

Are the soul, life, and body merely shadows?—The soul is of the same nature as God, and one of the many properties of universal life; like the sea, and a drop of water; when the latter joins the former, it also is sea.

How do the *Paramátmá* (supreme soul) and *Jivátmá* (living soul) differ?—They do not differ, and pleasure and pain ascribable to the latter, arises from its imprisonment in the body—the water of the Ganges is the same whether it run in the river's bed or be shut up in a decanter.

What difference should that occasion?—Great—a drop of wine added to the water in the decanter will impart its flavor to the whole, but it would be lost in the river. The *Paramátmá*, therefore, is beyond accident, but the *Jivátmá* is afflicted by sense and passion. Water cast loosely on a fire will extinguish the fire; put that water over the fire in a boiler, and the fire will evaporise the water, so the body being the confining caldron, and passion the fire, the soul, which is compared to the water, is dispersed abroad;—the one great supreme soul is incapable of these properties, and happiness is therefore only obtained in re-union with it, when the dispersed and individualized portions combine again with it, as the drops of water with the parent stream; hence, although God needs not the service of his slave, yet the slave should remember that he is separated from God by the body alone, and may exclaim perpetually Blessed be the moment when I shall lift the veil from off that face. The veil of the face of my beloved is the dust of my body.

What are the feelings of the perfect *Fakir?*—They have not been, they are not to be, described, as it is said—a person asked me what are the sensations of a lover? I replied, when you are a lover, you will know.

PRÁN NÁTHIS.

These are also called *Dhámis:* they owe their origin to PRÁN NÁTH, a *Khetriya*, who being versed in Mohammedan learning, as well as in his own, attempted to reconcile the two religions: with this view, he composed a work called the *Mahitáriyal*, in which texts from the *Koran*, and the *Vedas* are brought together, and shewn not to be essentially different. PRÁN NÁTH flourished about the latter part of AURUNGZEB's reign, and is said to have acquired great influence with CHATTRASÁL, *Raja* of *Bundelkand*, by effecting the discovery of a diamond mine. *Bundelkand* is the chief seat of his followers, and in *Punna* is a building consecrated to the use of the sect, in one apartment of which, on a table covered with gold cloth, lies the volume of the founder.

As a test of the disciple's consent to the real identity of the essence of the Hindu and Mohammedan creeds, the ceremony of initiation,

consists of eating in the society of members of both communions: with this exception, and the admission of the general principle, it does not appear that the two classes confound their civil or even religious distinctions: they continue to observe the practices and ritual of their forefathers, whether Musselman or Hindu, and the union, beyond that of community of eating, is no more than any rational individual of either sect is fully prepared for, or the admission, that the God of both, and of all religions, is one and the same.

SÁDHS.

A full account of this sect of Hindu Unitarians, by the Reverend Mr. FISHER, was published in the Missionary Intelligencer some years ago, and some further notice of them is inserted in the Transactions of the Royal Asiatic Society, by Mr. TRANT. They are distinguished from other Hindus, by professing the adoration of one Creator, and by personal and moral observances which entitle them, in their own estimation, to the appellation of *Sádhs*, *Sádhus*, Pure or Puritans.

The *Sádhs* are found chiefly in the upper part of the *Doab*, from *Farakhabád* to beyond *Delhi*. In the former, they occupy a suburb called *Sádhwára*, and are more numerous there than in any other town, their numbers are estimated at two thousand. There are said to be some at *Mirzapore*, and a few more to the South; their numbers, however, are limited, and they are chiefly from the lower classes.

The sect originated in the year of VIKRAMÁDITYA, 1714, (A. D. 1658) according to Mr. TRANT, with a person named BIRBHÁN, who received a miraculous communication from one UDAYA DÁS, and in consequence taught the *Sadh* doctrines. Mr. FISHER calls BIRBHÁN the disciple of

JOGI DAS, who commanding a body of troops in the service of the *Rája* of *Dholpur*, was left as slain on the field of battle, but restored to life by a stranger in the guise of a mendicant, who carried him to a mountain, taught him the tenets of the faith, and having bestowed upon him the power of working miracles, sent him to disseminate his doctrines. These circumstances are rather obscurely alluded to in the original authorities consulted on the present occasion, but they agree with the above in considering BIRBHÁN an inhabitant of *Brijhasir*, near *Narnoul*, in the province of *Delhi*, as the founder of the sect, at the date above mentioned. BIRBHÁN received his knowledge from the SAT GURU, the pure teacher, also called *Údaka Dás*, the servant of the one God, and particularly described as the *Málek ka Hukem*, the order of the Creator, the personified word of God.

The doctrines taught by the super-human instructor of BIRBHÁN were communicated in *Sabdas* and *Sákhis*, detached Hindi stanzas like those of KABIR. They are collected into manuals, and read at the religious meetings of the *Sádhs*: their substance is collected into a tract entitled *Ádi Upadés*, first precepts, in which the whole code is arranged under the following twelve *Hukems*, or Commandments.

1. Acknowledge but one God who made and can destroy you, to whom there is none superior, and to whom alone therefore is worship due, not to earth, nor stone, nor metal, nor wood, nor trees, nor any created thing. There is but one Lord, and the word of the Lord. He who meditates on falsehoods, practices falsehood, and commits sin, and he who commits sin falls into Hell.

2. Be modest and humble, set not your affections on the world, adhere faithfully to your creed, and avoid intercourse with all not of the same faith, eat not of a stranger's bread.

3. Never lie nor speak ill at any time to, or of any thing, of earth or water, of trees or animals. Let the tongue be employed in the praise of God. Never steal, nor wealth, nor

land, nor beasts, nor pasture: distinguish your own from another's property, and be content with what you possess. Never imagine evil. Let not your eyes rest on improper objects, nor men, nor women, nor dances, nor shows.

4. Listen not to evil discourse, nor to any thing but the praises of the Creator, nor to tales, nor gossip, nor calumny, nor music, nor singing, except hymns; but then the only musical accompaniment must be in the mind.

5. Never covet any thing, either of body or wealth: take not of another. God is the giver of all things, as your trust is in him so shall you receive.

6. When asked what you are, declare yourself a *Sádh*, speak not of caste, engage not in controversy, hold firm your faith, put not your hope in men.

7. Wear white garments, use no pigments, nor collyrium, nor dentifrice, nor *Meňndi*, nor mark your person, nor your forehead with sectarial distinctions, nor wear chaplets, or rosaries, or jewels.

8. Never eat nor drink intoxicating substances, nor chew *pán*, nor smell perfumes, nor smoke tobacco, nor chew nor smell opium, hold not up your hands, bow not down your head in the presence of idols or of men.

9. Take no life away, nor offer personal violence, nor give damnatory evidence, nor seize any thing by force.

10. Let a man wed one wife and a woman one husband, let not a man eat of a woman's leavings, but a woman may of a man's, as may be the custom. Let the woman be obedient to the man.

11. Assume not the garb of a mendicant, nor solicit alms, nor accept gifts. Have no dread of necromancy, neither have recourse to it. Know before you confide. The meetings of the Pious are the only places of pilgrimage, but understand who are the Pious before you so salute them.

12. Let not a *Sádh* be superstitious as to days, or to lunations, or to months, or the cries or appearances of birds or animals; let him seek only the will of the Lord.

These injunctions are repeated in a variety of forms, but the purport is the same, and they comprise the essence of the *Sádh* doctrine which is evidently derived from the unitarianism of KABÍR, NÁNAK, and similar writers, with a slight graft from the principles of Christianity. In their notions of the constitution of the universe, in the real, although temporary existence of inferior deities and their incarnations, and in the ultimate object of all devotion, liberation from life on earth, or *Mukti*, the *Sádhs* do not differ from other *Hindus*.

The *Sádhs* have no temples, but assemble at stated periods in houses, or courts adjoining set apart for this purpose. According to Mr. FISHER, their meetings are held every full moon, when men and women collect at an early hour, all bringing such food as they are able, the day is spent in miscellaneous conversation, or in the discussion of matters of common interest. In the evening, they eat and drink together, and the night is passed in the recitation of the stanzas attributed to BIRBHÁN, or his preceptor, and the poems of DÁDU, NÁNAK, or KABÍR.

From the term they apply to the deity, SATNÁM, the *true* name, the *Sádhs* are also called *Satnámis;* but this appellation more especially indicates a different, although kindred sect.

SATNÁMIS.

These profess to adore the true name alone, the one God, the cause and creator of all things, *Nirgun*, or void of sensible qualities, without beginning or end.

They borrow, however, their notions of creation from the *Vedânta* philosophy, or rather from the modified form in which it is adapted to vulgar apprehension. Worldly existence is illusion, or the work of MÂYÂ, the primitive character of BHAVÂNÍ, the wife of SIVA. They recognise accordingly the whole Hindu Pantheon—and, although they profess to worship but one God, pay reverence to what they consider manifestations of his nature visible in the *Avatârs*, particularly RÂMA and KRISHNA.

Unlike the *Sâdhs* also, they use distinctive marks, and wear a double string of silk bound round the right wrist. Frontal lines are not invariably employed, but some make a perpendicular streak with ashes of a burnt offering made to HANUMAN.

Their moral code is something like that of all *Hindu* quietists, and enjoins indifference to the world, its pleasures or its pains, implicit devotion to the spiritual guide, clemency and gentleness, rigid adherence to truth, the discharge of all ordinary, social, or religious obligations, and the hope of final absorption into the one spirit which pervades all things.

There is little or no difference therefore in essentials between the *Satnámí's* and some of the *Vaisknava* unitarians, but they regard themselves as a separate body, and have their own founder JAGJÍVAN DÁS. He was a *Kshetriya* by birth, and continued in the state of *Grihastha*, or house-holder, through life: he was a native of *Oude*, and his *Samádh*, or shrine, is shewn at *Katwa*, a place between *Lucknow* and *Ajudhya*. He wrote several tracts, as the *Jnyán Prakás*, *Mahápralaya*, and *Prathama Grantha:* they are in *Hindi* couplets; the first is dated in Sambat 1817, or A. D. 1761, the last is in the form of a dialogue between SIVA and PÂRVATÍ. The following is from the *Mahápralaya*.

"The pure man lives amidst all, but away from all: his affections are engaged by nothing: what he may know he knows, but he makes no enquiry: he neither goes nor comes, neither learns nor teaches, neither cries nor sighs, but discusses himself with himself. There is neither pleasure nor pain, neither clemency nor wrath, neither fool nor sage to him. JAGJIVANDAS asks, does any one know a man so exempt from infirmity who lives apart from mankind and indulges not in idle speech."

SIVA NÁRÁYÁNÁIS.

This is another sect professing the worship of one God, of whom no attributes are predicated. Their unitarianism is more unqualified than that of either of the preceding, as they offer no worship, pay no regard whatever to any of the objects of Hindu or Mohammedan veneration. They also differ from all in admitting proselytes alike from Hindus or Mohammedans, and the sect comprises even professed Christians from the lower classes of the mixed population.

Admission into the sect is not a matter of much ceremony, and a *Guru*, or spiritual guidé, is not requisite; a few *Siva Náráyanís* assemble at the requisition of a novice, place one of their text books in the midst of them, on which betel and sweetmeats have previously been arranged. After awhile these are distributed amongst the party, a few passages are read from the book, and the sect has acquired a new member.

Truth, temperance, and mercy are the cardinal virtues of this sect, as well as of the *Sádhs;* polygamy is prohibited; and sectarial marks are not used: conformity to the external observances of the Hindu or Mohammedans, independantly of religious rites, is recommended, but latitude of practice is not unfrequent; and the *Siva Náráyanís*, of the lower orders, are occasionally addicted to strong potations.

The sect derives its appellation from that of its founder SIVANÁRÁYAN, a *Rajput*, of the *Nerivána* tribe, a native of *Chandáwan*, a village near *Ghazipur*: he flourished in the reign of MOHAMMED SHAH, and one of his works is dated *Sambat*, 1791, or A. D. 1735. He was a voluminous writer in the inculcation of his doctrines, and eleven books, in Hindi verse, are ascribed to him. They are entitled: *Lao* or *Lava Granth*, *Santvilás*, *Wajan Granth*, *Santsundara*, *Gurú Nyás*, *Sant Achárí*, *Sant Opadesa*, *Sabdávalí*, *Santparwána*, *Sant Mahima*, *Sant Ságar*.

There is also a twelfth, the Seal of the whole, but it has not yet been divulged, remaining in the exclusive charge of the head of the sect. This person resides at *Balsande*, in the *Ghazipur* district, where there is a college and establishment.

The *Sivanárayanís* are mostly *Rajputs*, and many are *Sipahis*: many of the Up-county Bearers also belong to the sect. The members are said to be numerous about *Ghazipur*, and some are to be met with in Calcutta.

SÚNYABÁDIS.

The last sect which it has been proposed to notice is one of which the doctrines are atheistical. There is no novelty in this creed, as it was that of the *Chárvákas* and *Nástikas*, and is, to a great extent, that of the *Bauddhas* and *Jains*; but an attempt has been recently made to give it a more comprehensive and universal character, and to bring it within the reach of popular attraction.

A distinguished Patron of the *Súnyabádis* was DÁYARÁM, the *Raja* of *Hatras*, when that fortress was destroyed by the Marquis of HASTINGS. Under his encouragement, a work in Hindi verse was composed by

BAKHTÁWAR, a religious mendicant, entitled the *Sunisár*, the essence of emptiness, the purport of which is to shew that all notions of man and God are fallacies, and that nothing, is: a few passages from this book will convey an idea of the tenets of the sect.

"Whatever I behold is Vacuity. Theism and Atheism—MÁYÁ and BRAHM—all is false, all is error—the globe itself, and the egg of BRAHMÁ, the seven *Dwípas* and nine *Khandas*, heaven and earth, the sun and moon, BRAHMÁ, VISHNU and SIVA, KÚRMA and SESHA, the *Guru* and his pupil, the individual and the species, the temple and the god, the observance of ceremonial rites, and the muttering of prayers, all is emptiness. Speech, hearing and discussion are emptiness, and substance itself is no more."

"Let every one meditate upon himself, nor make known his self-communion to another—let him be the worshipper and the worship, nor talk of a difference between this and that—look into yourself and not into another, for in yourself that other will be found—there is no other but myself, and I talk of another from ignorance. In the same way as I see my face in a glass, I see myself in others, but it is error to think that what I see is not my face but that of another—whatever you see is but yourself, and father and mother are non-entities; you are the infant and the old man, the wise man and the fool, the male and the female: it is you who are drowned in the stream, you who pass over, you are the killer, and the slain, the slayer and the eater, you are the king and the subject. You seize yourself and let go, you sleep, and you wake, you dance for yourself, you play and sing for yourself. You are the sensualist and the ascetic, the sick man and the strong—in short, whatever you see, that is you, as bubbles, surf, and billows are all but water."

"When we are visited in sleep by visions, we think in our sleep that those visions are realities—we wake, and find them falsehoods, and they

leave not a wreck behind. One man in his sleep receives some information, and he goes and tells it to his neighbour—from such idle narrations what benefit is obtained—what will be left to us when we have been winnowing chaff."

"I meditate upon the *Suni* Doctrine alone, and know neither virtue nor vice—many have been the princes of the earth, and nothing did they bring and nothing took they away—the good name of the liberal survived him, and disrepute covered the niggard with its shadow. So let men speak good words, that none may speak ill of them afterwards. Take during the few days of your life what the world offers you. Enjoy your own share, and give some of it to others: without liberality, who shall acquire reputation? Give ever after your means, such is the established rule. To some give money, to some respect, to some kind words, and to some delight. Do good to all the world, that all the world may speak good of you. Praise the name of the liberal when you rise in the morning, and throw dust upon the name of the niggard. Evil and good are attributes of the body—you have the choice of two sweetmeats in your hands. KARNA was a giver of gold, and JANAKA as liberal as wise. SIVI, HARISCHANDRA, DADHÍCHA, and many others, have acquired by their bounty fame throughout the world."

"Many now are, many have been, and many will be—the world is never empty; like leaves upon the trees, new ones blossom as the old decay. Fix not your heart upon a withered leaf, but seek the shade of the green foliage—a horse of a thousand rupees is good for nothing when dead, but a living tattoo will carry you along the road. Have no hope in the man that is dead, trust but in him that is living. He that is dead will be alive no more: a truth that all men do not know: of all those that have died, has any business brought any one back again, or has any one brought back tidings of the rest. A rent garment cannot be spun

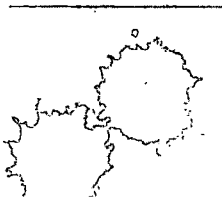
anew, a broken pot cannot be pieced again A living man has nothing to do with heaven and hell, but when the body has become dust, what is the difference between a Jackass and a dead Saint."

"Earth, water, fire, and wind, blended together, constitute the body —of these four elements the world is composed, and there is nothing else. This is BRAHMÁ, this is a pismire, all consists of these elements, and proceeds from them through separate receptacles."

"Beings are born from the womb, the egg, the germ, and vapour."

"*Hindus* and *Musselmans* are of the same nature, two leaves of one tree —these call their teachers *Mullas*, those term them *Pandits*; two pitchers of one clay: one performs *Numaz*, the other offers *Puja*: where is the difference? I know of no dissimilarity—they are both followers of the doctrine of Duality—they have the same bone, the same flesh, the same blood, and the same marrow. One cuts off the foreskin, the other puts on a sacrificial thread. Ask of them the difference, enquire the importance of these distinctions, and they will quarrel with you: dispute not, but know them to be the same—avoid all idle wrangling and strife, and adhere to the truth, the doctrine of DÁYARÁM.

"I fear not to declare the truth—I know no difference between a subject and a king—I want neither homage nor respect, and hold no communion with any but the good: what I can obtain with facility that will I desire, but a palace or a thicket are to me the same—the error of *mine* and *thine* have I cast away, and know nothing of loss or gain. When a man can meet with a preceptor to teach him these truths, he will destroy the errors of a million of births, such a teacher is now in the world, and such a one is DÁYARÁM."



The survey that has thus been taken of the actual state of the Hindu religion will shew, that its internal constitution has not been exempt from those varieties, to which all human systems of belief are subject, and that it has undergone great and frequent modifications, until it presents an appearance which there is great reason to suppose is very different from that which it originally wore.

The precise character of the primitive Hindu system will only be justly appreciated, when a considerable portion of the ritual of the *Vedas* shall have been translated, but some notion of their contents and purport may be formed from Mr. COLEBROOKE's account of them,* as well as from his description of the religious ceremonies of the Hindus.† It is also probable that the Institutes of MENU, in a great measure, harmonise with the *Vaidik* Code.

From these sources then it would seem, that some of the original rites are still preserved in the *Homa*, or fire offerings, and in such of the *Sanskáras*, or purificatory ceremonies, as are observed at the periods of birth, tonsure, investiture, marriage and cremation. Even in these ceremonies, however, formulæ, borrowed from the *Tantras*, assume the place of the genuine texts, whilst on many occasions the observances of the *Vedas* are wholly neglected. Nor is this inconsistent with the original system, which was devised for certain recognised classes into which the Hindu community was then divided, and of which three out of four parts no longer exist—the Hindus being now distinguished into Brahmans and mixed castes alone—and the former having almost universally deviated

* Asiatic Researches vol. VIII.

† Asiatic Researches vol. VII.

from the duties and habits to which they were originally devoted. Neither of these classes, therefore, can with propriety make use of the *Vaidik* ritual, and their manual of devotion must be taken from some other source.

How far the preference of any individual Divinity, as an especial object of veneration, is authorised by the *Vedas*, remains yet to be determined; but there is no reason to doubt that most of the forms to which homage is now paid are of modern canonization. At any rate such is the highest antiquity of the most celebrated Teachers and Founders of the popular sects; and BÁSAVA in the *Dekhin*, VALLABHA SWÁMÍ in *Hindustan*, and CHAITANYA in *Bengal*, claim no earlier a date than the eleventh and sixteenth centuries.

Consistent with the introduction of new objects of devotion, is the elevation of new races of individuals to the respect or reverence of the populace as their ministers and representatives. The Brahmans retain, it is true, a traditional sanctity and when they cultivate pursuits suited to their character, as the Law and Literature of their sacred language, they receive occasional marks of attention, and periodical donations from the most opulent of their countrymen. But a very mistaken notion prevails generally amongst Europeans of the position of the Brahmans in Hindu society, founded on the terms in which they are spoken of by MENU, and the application of the expression 'Priesthood,' to the Brahmanical Order, by Sir WILLIAM JONES. In the strict sense of the phrase it never was applicable to the Brahmans, for although some amongst them acted in ancient times as family priests, and conducted the fixed or occasional ceremonials of household worship, yet even MENU holds the Brahman, who ministers to an idol, infamous during life, and condemned to the infernal regions after death, and the Sanscrit language abounds with synonimes for the priest of a temple, significant of his degraded condition

both in this world and the next. Ministrant Priests in temples, therefore, the Brahmans, collectively speaking, never were—and although many amongst them act in that capacity, it is no more their appropriate province than any other lucrative occupation. In the present day, however, they have ceased to be in a great measure the ghostly advisers of the people, either individually or in their households. This office is now filled by various persons, who pretend to superior sanctity, as *Gosains*, *Vairágis*, and *Sanyásis*. Many of these are Brahmans, but they are not necessarily so, and it is not as Brahmans that they receive the veneration of their lay followers. They derive it as we have seen from individual repute, or more frequently from their descent from the founder of some particular division, as is the case with the *Gokulastha Gosains* and the *Goswámis* of Bengal. The Brahmans as a caste exercise little real influence on the minds of the Hindus beyond what they obtain from their numbers, affluence and rank. As a hierarchy they are null, and as a literary body they are few, and meet with but slender countenance from their countrymen or their foreign rulers. That they are still of great importance in the social system of British India, is unquestionable, but it is not as a priesthood. They bear a very large proportion to all the other tribes,—they are of more respectable birth, and in general of better education—a prescriptive reverence for the order improves these advantages, and Brahmans are accordingly numerous amongst the most affluent and distinguished members of every Hindu state. It is only, however, as far as they are identified with the *Gurus* of the popular sects, that they can be said to hold any other than secular consideration.

Aware apparently of the inequality upon which those *Gurus* contended with the long established claims of the Brahmanical tribe, the new teachers of the people took care to invest themselves with still higher pretensions. The *Achárya* or *Guru* of the three first classes, is no doubt described by Menu, as entitled to the most profound respect from his pupil

during pupilage, but the *Guru* of the present day exacts implicit devotion from his disciples during life. It is unnecessary here to repeat what there has been previous occasion to notice with respect to the extravagant obedience to be paid by some sectarians to the *Guru*, whose favour is declared to be of much more importance than that of the god whom he represents.

Another peculiarity in the modern systems which has been adverted to in the preceding pages, is the paramount value of *Bhakti*—faith—implicit reliance on the favour of the Deity worshipped. This is a substitute for all religious or moral acts, and an expiation for every crime. Now, in the *Vedas* two branches are distinctly marked, the practical and speculative. The former consists of prayers and rules for oblations to any or all of the gods—but especially to INDRA and AGNI, the ruler of the firmament and of fire, for positive worldly goods, health, posterity and affluence. The latter is the investigation of matter and spirit, leading to detachment from worldly feelings and interests, and final liberation from bodily existence. The first is intended for the bulk of mankind, the second for philosophers and ascetics. There is not a word of faith, of implicit belief or passionate devotion in all this, and they seem to have been as little essential to the primitive Hindu worship as they were to the religious systems of Greece and Rome. *Bhakti* is an invention, and apparently a modern one, of the Institutors of the existing sects, intended like that of the mystical holiness of the *Guru*, to extend their own authority. It has no doubt exercised a most mischievous influence upon the moral principles of the Hindus.

Notwithstanding the provisions with which the sectarian *Gurus* fortified themselves, it is clear that they were never able to enlist the whole of Hinduism under their banners, or to suppress all doubt and disbelief. It has been shewn in the introductory pages of this essay, that great latitude of speculation has always been allowed amongst the Brahmans

themselves, and it will have been seen from the notices of different sects, that scepticism is not unfrequent amongst the less privileged orders. The tendency of many widely diffused divisions is decidedly monotheistical, and we have seen that both in ancient and modern times, attempts have been made to inculcate the doctrines of utter unbelief. It is not likely that these will ever extensively spread, but there can be little doubt that with the diffusion of education, independant enquiry into the merits of the prevailing systems and their professors, will become more universal, and be better directed. The germ is native to the soil: it has been kept alive for ages under the most unfavourable circumstances, and has been apparently more vigorous than ever during the last century. It only now requires prudent and patient fostering to grow into a stately tree, and yield goodly fruit.

IV.

MEMOIR

OF A

SURVEY OF ASAM AND THE NEIGHBOURING COUNTRIES,

EXECUTED IN 1825-6-7-8.

BY LIEUTENANT R. WILCOX.

In the following Memoir I propose to give a detailed account of the progress of our Geographical Discoveries on the N. E. Frontier from the time when our armies advancing in that direction opened to us countries of which we had till then a very imperfect knowledge.

Narratives of some of the journies have been already published, and much of the new information has been included in a paper in the 16th Vol. of the Asiatic Researches: but the former are scattered in the News-papers or Periodicals without connection to enable the enquirer to collect the scattered gleams of information into one common focus, while the latter, including only the results obtained by one of the individuals engaged in that quarter, and applying also to statistic enquiries; gives necessarily an inadequate idea of our acquisitions in Geographical information properly so called, as it also stops short of the date at which our enquiries terminated. This appears to have been felt by the Society, who have

expressed a wish in a note attached to that paper by their Secretary, that some task similar to the one I propose to myself should be undertaken. The interest too excited by the question of the identity of the *Sanpo* and *Brahmaputra*, evidenced by the notice taken of the subject in Europe, seems to call for the execution of such a task: and I have therefore been induced to draw up the following Memoir.

I should have been well pleased to have seen the task fall into other hands, and I have delayed undertaking it in the hope of some one better prepared anticipating me, yet I would not be understood to disqualify myself more than necessary. Having been on the spot from the beginning, at first an interested observer, and latterly employed in exploring myself much of the Terra incognita of that quarter, I consider that I ought to be able to give a connected view of the progressive steps made, as well as to supply many particulars necessary to the full comprehension of the subject, not yet generally adverted to.

In October 1824, several of the Officers employed in Revenue Surveys were taken from those duties, and placed (to continue during the war) under the superintendance of Major SCHALCH, in order that accompanying the several divisions of the army and receiving his instructions, they might derive advantage to the utmost practicable extent of the opportunities so suddenly and unexpectedly opened of pushing our investigations beyond those barriers which the well or ill-founded jealousy of our Eastern neighbours had hitherto opposed to us, and which we had till then no immediate hope of surmounting.

In the distribution I was appointed to act with Captain BEDFORD as his Assistant, and our province was *Asam*. Besides the instructions given generally to his corps by Major SCHALCH, (as conveyed in a circular letter) Captain BEDFORD was verbally directed to consider the *Brahmaputra*

as the chief object to which his attention should be directed. He was to endeavour to unravel the mystery in which was enveloped each notice or tradition respecting its fountain head by proceeding up its streams as far as the influence of the neighbouring force, or the safeguard of a detached escort might permit.

We arrived at *Goalpara*, on the frontier of *Asam*, in the latter end of January, 1825, immediately after the capitulation of the *Burma* force at *Rangpur*, and we were then eager to join the Head-Quarters in full expectation of an attempt being made to advance towards *Amarapura*. We were already making anxious enquiries respecting the source of the *Brahmaputra*, and we were given to understand that the *Asamese* persisted in a common declaration that it rises in the East beyond their territories. We were told of a cataract, which imagination perhaps, rather than report, founded on respectable information, long continued to magnify into a splendid fall of the whole river from the bordering ridge of mountains.

Mr. Scott,* indefatigable and ardent in the cause of scientific research, had in the meantime, on arriving at *Rangpur*, caused Lieutenant Burlton to be detached, to survey the river beyond as far as practicable; but there no longer existed such extreme doubt about the direction and distance of the navigable part of its course. The Natives knew well that the boats of Bengal could not pass more than one day's journey beyond *Sadiya;* (in Lat. 27° 48′ Long. 95° 40′) they spoke confidently (and their information could no longer be doubted) of the *Brahmakund*, the origin of the river, being situated in the East; and, indeed, they had presented

* Ensign (now Colonel) Wood's Survey reached no further than *Rangpur*, and he leaves the space beyond a perfect blank. He accounts for the paucity of his Geographical information beyond the mere line of the river, by the difficulties he laboured under in holding intercourse with the Natives.

a Map drawn in their own incorrect style, shewing the situation of the notable villages or districts, and exhibiting the various nalas feeding the *Brahmaputra* within their limits. It was afterwards remarked that in this production, the *Dihong* and the *Dibong* were not distinguished from other tributary streams.

The commission with which Lieutenant BURLTON was charged was executed by him in a highly creditable manner. With a surveying compass only, and unfurnished with any instrument for measuring distances, he surveyed the river to *Sadiya* and a short distance beyond, and subsequent measurement has detected but little error in the Map he made.

In the Government Gazette of 9th May, 1825, appeared an extract from Lieutenant BURLTON's letter, giving an account of this expedition, it is dated "On the river Burrampooter, N. Lat. 27° 54′ E. Long. 95° 24′ March 31st, 1825."* He reports that he had that day got as high up the river, as it was navigable: its bed, he says, was a complete mass of rocks,† with only a depth of three or four feet water in the deepest part, the rapidity of the current was also so great, that no boat could track against it, putting the danger of striking on the rocks out of the question. He considers it as about the size of the *Kullong* river, (one hundred and fifty yards across) and the extreme banks as being not more than six hundred yards apart. Lieutenant BURLTON regrets that he could not proceed further either by land or water. It was represented to be at least ten days' journey to the *Brahmakund*, and he had but a few days provisions left—what he had learnt respecting the course of the river above, was "that it runs easterly

* The true place was about Lat. 27° 49′ and Long. 95° 52′.

† Not rocks in situ, but rounded stones and pebbles brought down from the mountains in the rainy season. R. W.

till it reaches the lowest range of mountains,* (Lieutenant BURLTON could see the range, and supposed it to be about fifty miles distant,) where it falls from a perpendicular height of about one hundred and twenty feet, and forms a large *bottomless* bay, which is called the *Brahma Kund*." Above the low range are some high mountains, which are covered with snow, and from the narrowness of the water he imagined, that the source of the *Brahmaputra* must be there, as it seemed very improbable such a small body of water could run the distance it is represented or supposed to do.

From what the Natives said respecting the *Siri Sirhit*,† or *Irawadi*, Lieutenant BURLTON was inclined to think that that river rises at the same place.

The impression made by the foregoing account is apparent in the remarks made upon it by the Editor of the Government Gazette. Discussing RENNELL's inference of the connexion of the *Sanpu* and *Brahmaputra* rivers, he says, "The *Sanpu* where left by the Chinese is called a very large river, and the name itself *Sanpu*, is said to imply the river par excellence. How happens it then upon entering *Asam* to have lost all claim to such a character, and to be little more than a hill torrent, with only three or four feet water in its greatest depth." Had Lieutenant BURLTON added an account of the discharge of the river, according to the sections he took below the *Búrí Dihong* mouth, and near *Sadiya*, this idea of the character of the river could never have been formed. For the quantity of water discharged per second in the former place, was found to be 86,727

* It is hardly necessary to observe, that Lieut. BURLTON means *from the East*, or *from* the lowest range of mountains *westerly*.

† It was so printed, but Lieut. BURLTON must have printed and probably wrote the *Seeree Lohit*, or *Sri Lohit*.

cubic feet per second, and of the sacred *Brahmaputra*, or eastern branch passing *Sadiya*, 32,413 feet in the same time. It is however to be observed, that there had been a considerable rise before the latter measurement was made, and that divided as the river is in that part of its stream near *Rangpur* into many channels, it is probable that the former did not embrace the whole river, or that some of the minor channels had been omitted, being inaccessible.

The next notice that appeared is in the Government Gazette, 9th June, and it is important to notice it, if merely to show that attention was not yet directed to the navigation of the *Dihong*, though it is mentioned in these terms: "The river (i. e. *Brahmaputra*) washes *Silání Múkh* or *Múr*, so called from the numerous stones and fragments of rock washed down from the hills by the *Dihong* and *Dibong* rivers, which soon after empty themselves into the *Lohit;* these rise and flow from perceptible openings in the high chain of hills to the northward, and considerably contribute to the mass of the river, which after passing above their mouths, diminishes materially in bulk and importance." The writer further says, "But the object of greatest interest to topographical science is a clear and distinct opening in the lower lofty ranges bearing due east, behind which is pointed out by all ranks and classes, the *Brahma Kund*, or reservoir, whence flows the *Brahmaputra*, and distant from hence not more than forty or fifty miles—six days' journey. The stream is described as taking its rise from a circular basin or well in the side of the mountain beneath the snowy region, while behind and above it are stupendous ranges of impracticable transit."

In the mean time Captain BEDFORD and myself had reached *Bishanath*, where directions were received in a letter from Colonel RICHARDS, commanding the force, to survey the *Búrí Lohit*, or old channel of the

river, to the head of the *Majholi* island, and as both Officers might be profitably employed, we were directed to separate, one of the two re-surveying in progress to *Rangpur*, the *Dihing*, or southern branch.

I may here endeavour to elucidate a point which I observe has caused considerable difficulty—I have it on the authority of the present *Bar Gohayn* of *Asam*, corroborated by the evidence of other well-informed *Asamese* whom I had questioned, that before the remarkable flood from the *Dihong* altered entirely the state of its channels, and the direction of the principal body of the river, the *Dihing* did not disembogue itself where it does now into the *Brahmaputra*, but turning to the south-east received the *Disang*, and *Dikho*, the *Jazi*, and *Disai* river, and was discharged into the great river near *Mahura*. A peninsula, or rather long neck of land then existed, and the channel of the *Dihing* was then in the bed of that branch still retaining the name. The great river from near *Silání Múr* to *Sisí*, flowed in a bed which still continues to fill in the rains, though it is of diminished size to the north of the present channel. It is called the *Búrí Súti*, or *Súti Lohit*. The *Búrí Lohit*, since this singular division of its former supply of water has become of so little consequence that above the junction of the *Subanshíri*, it is barely navigable in the dry season. The division of the waters of the *Dihing* is an event of much later date. It is said that the passage through the low land in the direction of *Sadiya*, was aided by some rivulet draining the jungles, that an accumulation of stones in the vicinity of the *Kusan* hills, was the immediate cause, and that the opening now called the new *Dihing*, was very gradually enlarged by the influence of successive rains, causing an equivalent diminution to the ancient *Dihing*, the old communication with which has no water in the cold season, and indeed, the name of *Búrí Dihing* might fairly be dropped in favor of the *Namrup*, from which it derives its present supply. Whether there existed a channel of

communication between the *Dihing* and *Lohit* near the spot where the *Búrí Dihing* now meets the latter, I never could satisfactorily learn.

But to return from this digression, Captain BEDFORD chose the *Búrí Lohit*, as it presented novelty, and left me to retrace Ensign WOOD's steps towards *Rangpur*, he completed his survey; but I met with an unfortunate accident in the progress of mine: about half way from *Bishanáth*, my map and field book, with the greatest part of my property, were lost by the sinking of my boat. Captain BEDFORD afterwards continued his route towards *Sadiya*, making a more accurate survey than Lieutenant BURLTON had the means of doing; and before the expiration of the month of June, he had surveyed not only the whole distance on the great river from *Bishanáth* to *Tenga Páni*, but having accompanied Captain NEUFVILLE on the expedition against the *Singfo* Chiefs, he also added a hasty survey of the *Noa Dihing*.

Soon after my arrival at *Dikho Múkh* in April, Colonel RICHARDS permitted me to accompany a party of the 46th Regiment, which was to proceed up the *Disang* river to *Borháth*, to protect the *Asamese* of the intermediate district in advance of *Rangpur*, from incursions of the *Singfos*, who had lately, in considerable strength, made a very daring and successful incursion close in the neighbourhood of the force.

After passing *Bel Bárí* on the *Dísang*, I found the banks of the river clothed with an impenetrable tree forest, and the distances I was compelled to estimate in time, guided by the experience I had of the progress of my boat at those places where it was practicable to use my perambulator. About five miles by the river below *Borháth*, we first encountered the shallow rapids formed by the accumulation of the pebbles brought down by the stream, and further progress in *Bengali* boats was impossible; but one of the *Asam* guides offered to conduct me to *Borháth;* and after

a most laborious march through jungle, where no trace of a path was to be found, I reached the place.

Near to *Borháth*, are several salt springs, whence a considerable quantity of salt used formerly to be obtained. Those at present worked were too far removed within the *Nága* hills, for me to visit them; the evaporation is carried on in green bamboos, and the salt presented was generally of a grey colour, extremely hard and compact, having the form of the bamboo in which it had been boiled, and possessing the radiated structure in perfection.*

After passing eighteen rapids in an attempt to survey the river beyond *Borháth* I desisted; the hills which I had then an opportunity of examining, for they were generally covered with soil to some depth, were either of grey or yellow sandstone: the former of a close hard texture and the latter coarse, and when exposed to the action of the waters converted speedily into clay; coal is found at no great distance.

I was told that the produce of the *Nága* hills is limited to ginger, black pepper, a few vegetables, iron and salt.

With the aid of an elephant and a party of coolies, I attempted to drag a canoe across to the old fort of *Jypur*, but on my arrival there I found my boat so much injured by rough usage in the way through the close forest that it was no longer serviceable. An *Asamese* captive had fortunately made his escape that day from the hands of the *Singfos*, and having robbed them of a canoe, in addition to such trifles as he could conveniently seize and carry off in it, he presented himself to our notice,

* May not these salt springs belong to the new red sandstone formation?

singing most lustily and merrily the song of liberty, and he readily yielded his prize to me. In his canoe I dropped down the *Búrí Dihing* to its mouth, taking the bearings of its numerous reaches, and noting the time. I mention this incident as a note of the mode in which the survey was performed. The *Búrí Dihing* wanders through a forest as dense as that of the parrellel river *Disang*, and the country between the two at that time was said to be an inhospitable tract of rank jungle, without a vestige of inhabitants.

The fort of *Jypur* I found so much overgrown with high grass jungle, that I must have passed it unawares, had not my guide pointed it out. It is a square of three hundred and fifty yards, with a dry ditch of six feet deep, the earth from which is thrown up in the form of a wall or bank six feet high.

My next employment was a survey of the river *Dikho*, which was made under more favorable circumstances for arriving at accuracy, as the distance by the bund road both to *Kowarpara* and to *Ghergong* was surveyed, and hills determined in position from this base served to correct the remaining portion, but here as in the *Disang*, after arriving within a certain distance of the hills, I found it impossible to proceed : it is similar in character to the before named rivers.

As my object is to give a connected view of the several steps of our discoveries, I must not omit to mention Lieutenant JONES's Journal of his March from *Rangpur* with the detachment, which I found at *Borháth* on my arrival there.

The Journal was noticed in the Government Gazette of 23d of June, and its contents though interesting, scarcely require repetition, as they chiefly describe the embarrassments of a party moving on bad roads

through a jungly and swampy tract intersected by swollen rivers. For the first fourteen miles, they encountered swamps, jheels, and tree jungle; then, after coming on a good broad road, and proceeding one mile along it, they found a fine stone bridge, of three arches, in good repair, over the *Tezekhana* nullah. The broad road continued (occasionally broken) through a more open country with the *Nâga* hills on the right at no great distance. The *Chipera* river was crossed by the help of a party of *Nâgas*, who are very expert in felling timber, and a raft was constructed for passing the baggage over the *Tsoozak*, which could not be forded by elephants.

On the 20th of June, appeared some further information, derived from Lieutenant NEUFVILLE, who, by means of some *Khangtis*, (*Khamtis*) originally from the *Bor Khangti* country, had been enabled to add to his former account, that "The *Bor Khangti* country, before remarked, lies in a direction from this spot a little to the south of east on the other side of the high snowy hills of the *Brahmakund*. These ranges he now finds extend back to a far greater depth than he had at first supposed, and he is assured to a far higher altitude than any of those now visible.* The *Burrampooter* or *Lohit*, accessible only as far as the reservoir of the *Brahmakund*, (unless perhaps to the hill *Meeshmees*) takes its original rise very considerably to the eastward, issuing from the snow at one of the loftiest of the ranges, thence it falls a mere mountain rivulet to the brim of the *Brahmakund*, which receives also the tribute of three streams from the *Meesmee* hills, called *Juhjung*, *Tisseek* and *Digaroo*.†. From the opposite

* To the north-east of *Sudiya*, there are higher mountains than those visible from the station—but directly towards the sources of the *Brahmaputra*, it does not appear that there are any higher.

† The only stream falling into the *Kund* or near it, is the *Deopani*, a mountain rill. The *Digarú* falls into the *Brahmaputra* —— miles west of the *Kund*, on the north bank the *Mitee* is the nearest, falling in from the south about half mile beyond. The *Tisseek* and *Juhjung*, I do not recognise.

side of the same mountain, which gives the primeval rise to the *Burrampooter*, the *Khangtis* state (as they had before stated to Lieutenant BURLTON,) "that the *Irawaddy* takes its source running south, intersecting their country and flowing to the *Ava* empire. This theory of the sources of the streams is thought by far the most probable; and it agrees more with the general accounts and the geographical features of the country." A little to the northward of east the opening of the *Brahmakund* is another less defined dip in the lofty line of the *Meeshmee* hills, through which Lieutenant NEUFVILLE has received a route, accessible to the mountaineers, of twenty days to the country of the *Lama*.*

It would be unjust to omit in these details notice of a service rendered to geography by Lieutenant BEDINGFIELD, when communication was opened with the *Burmas* after the fall of *Rangpur*; from several compared accounts he compiled a map of the *Kenduen* river, from the latitude of *Amarapura* to its sources, which is no doubt very nearly correct in its general features and also in many particulars. Subsequent accounts derived from *Singfos*, have enabled us to improve on the central part and add more topographical detail respecting the time of route of the *Burmas*, nor ought I to omit an account of a journey into *Bhutan*, performed by a *Persian*, under Mr. SCOTT's orders, and from which we learn principally that a route from *Gohati* to *Múrsing gaon*, in a northerly direction, or a little inclining to east, crosses the *Bhúrúli* river, which falls into the *Brahmaputra*, opposite *Kaliabar*.

* Given in the 16th vol. of Researches: the number of days I suppose nearly correct, but I cannot recognise more than one of the names of the stages, i. e. *Tidong* for *Tiding* river, "which might be reached in one day from the *Kund* by an active *Meesmee*," but the first cane bridge across the river is, I think, above the confluence of the *Tiding*, and in that case the *Tiding* would not require to be crossed in proceeding eastward. The route to the *Lama* country generally used is on the banks of the river.

Múrsing gaon is situated on the left bank of the *Bhúrúli*. The information collected by him from respectable *Towang* people, places that town three days farther north on the *Bonash* river, which joins the *Brahmaputra* at *Goalpara*.

The possession of the whole of *Asam*, by giving us access to so many points for enquiry on the north bank of the *Brahmaputra*, appearing now so much in favour of an attempt to solve the geographical problem of the connexion which this river has with the *Sanpo*, I was detached from the *Asam* force, by Colonel BLACKER, and instructed to act under the guidance and support of MR. SCOTT, in the prosecution of this most interesting inquiry, and for the purpose of consulting with that gentleman, was directed to proceed to *Goalpara*.

I received Colonel BLACKER's instruction at *Goalpara*. Mr. SCOTT had, in the meantime, neglected no opportunity of gathering information, but the *Asamese* proved fully as incurious as our subjects of Hindustan, and we found that even in directing our attention to the points best fitted for our first attempt, we should receive scarcely any aid from the best informed amongst them. As a specimen of the style of the few traditions on the subject which they were found possessed of, I shall give an extract from one of their books furnished by BOGA DAMRA PHOKEND,* who, we were told, is rich in the possession of such lore.

Judging from this wild story as a specimen, it might be inferred, that the *Asamese* account of the singular rise of the *Dihong* in 1735 (?) is not well authenticated. Not only, however, have we the evidence of their histories for this fact, but sufficient proof exists in the great alterations in the

* BOGA DAMRA, white calf, a jocular name given here by the common people : his real name I do not recollect.

state of the rivers which then occurred, as I have before noticed. The *Abors* and *Míris* ought to be in possession of all the facts relative to this occurrence, as they were the first observers of it, and the latter tribe having their villages on the east bank of the *Dihong* in the plains desolated by it: but they deny all knowledge of these remarkable circumstances; and indeed the *Abors*, when questioned about the elephant trappings, (or shackles for binding elephants) as I believe the statement in history gives it, immediately accounted for the appearance (of the latter) by the resemblance to some of their own implements.* The *Abors* gave a reason for the rise of the *Dihong*; but they did not speak confidently; they thought it was occasioned, by the river having suddenly penetrated; at a sharp turning, the earthy barrier opposed to it, or overturned a ledge of rocks. That this enormous body of water having so large a fall in that part of its course southward through the *Abor* mountains, must exert an extraordinary force, cannot be doubted.

After some deliberation as to the route I should attempt, Mr. Scott recommended that I should try the *Súbanshiri* before proceeding further eastward, and I started with a liberal supply of red cloth, beads, and such other articles as were likely to please the mountaineers. Having arrived at its mouth on the 28th November, I commenced my survey on the following day; but I was disappointed to find my further progress impeded on the sixth day by rapids, occasioned by the accumulation of round stones brought down from the hills, where, from its mouth, I had got but twenty-two miles latitude to the north.

Some of the Chiefs of an *Abor* tribe had arrived at this time, to make their annual collections from the district north of the *Búrí Lohit*. They

* The Writer in the 16th vol. Asiatic Researches, appears to consider this tradition as of some authority.

claim the whole of those plains as their domain, but whether this claim is the origin of their exactions, or whether the imbecile government of *Asam* had allowed to grow into a confirmed custom, an evil which they could not counteract, does not appear; however, from the *Bhúrúlí* to the banks of the *Dihong*, the whole of the hill tribes pretend to similar rights, and have never been interfered with, when, at the accustomed season, they have descended from their strong holds and peaceably taken their dues from each separate dwelling.

I had an interview with TALING GAM, the most powerful of these *Abor Míris*, and my presents of rum and cloth wrought so well with him, that I entertained hopes of starting for his village in his company, and had arranged to move off in canoes, to have the advantage of water conveyance for my provisions the remaining navigable portion of the river, which is said to be but three days.

My enquiries had not elicited any information to warrant the expectation of a successful result from this trip, as it appeared that the few articles of *Thibetan* manufacture, found amongst this people, were acquired by traffic with tribes more to the eastward: they would not acknowledge any acquaintance with the countries to the north, but described them as an uninhabited wild tract of hill and jungle. To their N. W., however, they place the *Onka Míris*, whose country, they say, is a level table land, and they are of opinion that these come in contact with the *Bhotiyas*—I thought that by gaining a footing in the first villages in the hills, I might either induce the people to throw off this reserve, if my suspicions of their concealing their knowledge were correct, or perhaps advance sufficiently far towards the north to make more effectual enquiries. I was disappointed through the interference of the *Asamese* of the *Sonari* villages, who anticipated some unknown evil from our communication with their hill neighbours, and this friendly Chieftain positively refused to accompany

me, or to let any of his people guide me till he should have returned and consulted his people.

Of the *Súbanshiri*, they could only tell me that it is divided above into three branches. It is called by them *Kamla*, and the principal branch rises in the N. or N. W. Snow, which I had seen lying on the mountain in a northerly direction, they told me was fifteen days' journey from their villages, and added that in the north east, they could perceive it hanging on the mountains, in great quantity, throughout the year. The *Míris* bring down to exchange with the lowlanders, ginger, pepper, manjit, (madder) and wax. The *Abors* of *Sueng Meng* and *Dohar Doowars*, more eastward, have also copper vessels, straight swords and elephants' teeth.

The *Súbanshiri* river is scarcely inferior to the Ganges at *Allahabad* in December. I found the discharge at its mouth 16,000 cubic feet per second, and up to the hills its tributary streams are few and of little consequence. I think there is no doubt of its being the *Omchu* of Du Halde and Rennell. Its low banks are covered with tree jungle and are subject to inundation; there are very few villages visible from the river, but inland, on both sides, the country is better cultivated and more populous than other parts of upper *Asam*, with the exception of *Jurháth* and *Chár Dwár*.

It had been agreed with Mr. Scott that in the event of my meeting with no success here, I should go on to the *Dihong* and *Dibong*, and if Captain Bedford had not already explored those rivers as far as practicable, that I should make my attempt there.

My own belief, founded on the reports of the *Míris*, now on the *Súbanshiri*, who had emigrated from the banks of those rivers, was that neither would be found navigable, and I was prepared to move overland wherever I could find admittance. The *Míris* did not pretend to any

certain knowledge of the origin of the *Dihong*, and they seemed to think that the notions current amongst their tribe and the *Asamese*, as little worthy my attention. They informed me that a tradition prevails with the *Abors* of the *Súbanshiri*, that their hunters once, travelling in quest of game, went much further towards the north than usual, and that they arrived at the banks of a noble and rapid river separating their wild hills from cultivated spreading plains, whence the lowing of oxen was distinctly audible. Another singular account they mentioned of the *Dihong Abors*, that the *Dihong* is an anastomosing branch of a river of great magnitude, called *Srí Lohít*, which also throws off the *Brahmaputra*, and passes into unknown regions to the eastward. The *Abors* are supposed to see this *Srí Lohít*, and on the opposite bank numbers of people, of a strange tribe, are perceived coming down to the ghaut to bathe, but it is too rapid and too broad to be crossed. Another tale is, that the *Sonáris* not finding the sand equally productive as usual in their old washing haunts, continued their way in a small canoe up the river, renewing their search for gold continually, but in vain, but that they suddenly arrived in a populous country, the manners and appearance of the inhabitants of which were strange to them; that on mentioning what had brought them so far from their houses, they were instantly rewarded for their toil by a large gift of the precious ore, and sent back delighted.

The *Asamese* are of opinion that the families of a *Bor Gohayn*, who had been sent for under suspicious circumstances by the reigning Raja, took refuge in the *Kalita* country; but they seem to want authority for the opinion, and at all events it is extremely doubtful, whether any intercourse was kept up afterwards. I hesitate to express this opinion, because an opposite statement has been made. My grounds for it are that, when perusing the *Asamese* history, I did not meet with a satisfactory account of what became of them. My recollection is, that "the sons and family of the *Gohayn* fled up the *Dihong*," and the present

very respectable *Bor Gohayn* of *Asam* could not give me better authority than mere tradition for the additional circumstances of their finding refuge in the *Kalita* country, and after intercourse with their friends in *Asam*.

On my arrival at *Sadiya*, I found that Captain BEDFORD had already proceeded up both the *Dihong* and *Dibong*, as far as he was permitted by the mountaineers, and I had great reason to fear that the same obstacles which he had experienced, would also interfere with my progress; but being provided with abundance of cloth, salt, and various articles in request amongst them, besides having the means of taking with me a sufficient guard to insure personal safety, an advantage which Captain BEDFORD wanted; moreover, having letters addressed in the *Asamese* language to the *Abors*, given me by the Junior Commissioner, and *Miri* Interpreters, who were accustomed to intercourse with them, I did not hesitate to make the trial.

As Captain BEDFORD's journey of this river was anterior to mine, so his account, extracts of which were published in the Government Gazette of 2d February, deserves a preference, I shall therefore endeavour, from these extracts, to convey the best idea I can of this most interesting river.

18th November.—On the first day after leaving the *Brahmaputra*, Captain BEDFORD was struck with the placid and mild character of the river, expecting as he did from all accounts of the utter impossibility of navigating it, to find it abounding in rocks and with a violent current. Sands were as frequent as in the *Brahmaputra*, and the jungle similar, that is, grass covers the islands and grounds formed by alluvial deposits, while the forests clothe the banks of older date: deer were numerous in the grass jungles.

19th November.—The second day no material obstacle was encountered, however stone beds were found to be taking place of sands, and several rapids were passed. The hills appeared near at hand, and in them a remarkable break, which was afterwards found to be, as conjectured, the channel of the river.

20th November.—The third day the rapids were more numerous, and more troublesome, but on the fourth, (21st of November,) they obstructed progress materially. Wherever encountered, the people were obliged to get out of the canoes, both to lighten them and to assist with their strength in pushing them against the currents. The direction of the river hitherto, nearly N. and S., is suddenly from the N. W. Deer and buffaloes were seen in numbers, as well as the large water fowl, called *Keewaree*. Musk beetles were very annoying from the intolerable odour communicated by contact with them; the hills were now so near, that trees and the colors of the foliage were plainly distinguishable on the nearer ranges, as well as the patches cleared for cultivation, but no habitation was yet seen.

22d November.—After tolerable progress, Captain BEDFORD arrived in the evening near *Pasial*, an *Alor* village, which is half a day's journey inland from the river, on the right bank. This was the limit of his excursion, as, on various pretences, the *Abors* of that place opposed his further progress. One plea urged was, that any one, having met them on friendly terms, would, no doubt, be very ill received by the *Abors* higher up, with whom they were at enmity. It was, therefore, necessary to return, after a stay of two days, and with such information as was to be obtained from the Natives, who, though obstinate on the score of a further advance, and troublesome, from their rude habits and childish curiosity, were, on the whole, amicable and communicative.

The hills on the right bank belong to the *Pasial* and *Mayong Abors*, and those on the left to the *Padoo, Siboo and Meeboo*, and *Goliwar Abors*.

The *Pasial Abors* were armed respectably enough; every man had a bow and quiver of arrows, part of the latter of which were poisoned.* They also carry light spears, or the sharp heavy sword *(Da)* of the *Singfos*. The *Abors* are not particular in their diet, and eat the flesh of the elephant, rhinoceros, hog, buffaloe, kid, and deer, as well as ducks and fowls, but they expressed an abhorrence of feeders on beef. They exhibited also a marked predilection for brandy, although some of them pretended to give a preference to a fermented liquor prepared by themselves. Salt, cloth, and tobacco were in great request amongst them.

The dress of the *Abors* consists principally of a choonga (*Asamese* name for dhoti) made of the bark of the *Uddal* tree. It answers the double purpose of a carpet to sit upon, and of a covering. It is tied round the loins, and hangs down behind in loose strips, about fifteen inches long, like a white bushy beard. It serves also as a pillow at night. The rest of their dress is, apparently, matter of individual taste; beads round the neck are not uncommon; some wore plain basket caps: some had the cane caps partly covered with skins, and others wore them ornamented with stained hair, like our helmets, and resembling the head dresses of the *Singfos*.† Almost every man had some article of woollen dress, varying from a rudely-made blanket waistcoat to a comfortable and tolerably well shaped cloak.

---

* They kill buffaloes with poisoned arrows; they track the beast which they have successfully wounded, knowing that he will not move far before the fatal effects of their deadly poison will become sensible; within half an hour the noble beast staggers and falls.

† The beak of the Buceros (Nepalensis) is a favorite and striking ornament of their caps; this, on the top in front, and the red chowry tail flowing down behind, gives very much the appearance of a helmet.

One of these, of a figured pattern, was made with sleeves; it was said to come from the country of the *Bor Abors;* the texture was good, though coarse, as was that of a red cloak worn by the Chief of the village.

The *Abors* seem to have been in the habit of levying contributions on their low-land and less martial neighbours of *Asam*, and to have resented any irregularity in their payment, by predatory incursions, carrying off the people prisoners; several *Asamese* captives were found amongst the *Abors* of *Pasial;* some of whom had been so long amongst them, as to have become completely reconciled to their condition.

Captain BEDFORD's account of his voyage up the *Dibong*, which followed, is the only one we have of that river, and as it was also the next excursion, in order of time, I continue the extracts from it, as published in the Appendix to WILSON's History of the Burmese War.

"On the 4th of December, Captain BEDFORD entered the mouth of the *Dibong;* the water was beautifully clear, running in a bottom of sand and stones. On the 5th, a shallow, or bar, was crossed, above which the stream was much obstructed by the trunks of trees brought down by the current. The river continued deep, and although several rapids were encountered, they were passed without much trouble; numerous traces of buffaloes, deer, and leopards were observed, and also of elephants, which last had not been seen along the *Dihong*, nor on one of its feeders, the *Lalee*. Amongst the trees on the banks, were several, of which the wood is serviceable in the construction of houses and boats, as the *Sáú* and *Soleana*. The *Demúrú* yields a bark which is eaten by the *Asamese* with pawn.

On the 6th, at 11 A. M., the most formidable rapid that had been met with, was passed with much difficulty; and on the following day a shallow, extending across the river, over which the boats were forced.

On the 8th, the part of the river reached was wide, and separated into many narrow and rapid streams; in the forenoon, the mouth of the *Bhanga Nadi* was passed, so named by the fishermen, from an idea that it is a branch of the *Dibong*, which forces its way through the forest; but, according to other information, it is a distinct stream, flowing from the hills. It was not navigable even for canoes, but the mouth was one hundred and fifty yards broad, and, if it rises from a distinct source in the mountains, it must bring down a considerable body of water in the rainy season.

The progress of the Survey was suspended, for the greater part of the 9th, by an accident to one of the canoes, which was split from stem to stern. It was repaired, however, by the fishermen, in a singular manner. Having collected some of the fresh bark of the *Simul* tree, about half an inch thick, and tolerably strong, they fastened this to the bottom of the dingee with bamboo pins, about an inch and a quarter long, and filled up the crevices with cloth, so as to keep out the water, and this slight apparatus succeeded in rendering the dingee almost as serviceable as before.

On the 10th, the river, although much intersected with forest, continued still to widen. It appears rather extraordinary, that a stream, the mouth of which is scarcely navigable, should have thus continued to improve in practicability, and that it should have presented more than one branch larger than the undivided river at its debouche. The difficulty is to conceive what becomes of the surplus water, unless it be absorbed partly in the sandy soil over which it flows, or stagnates in the hollows of the deepest portions of the bed. It seems not improbable, however, that in the rains, at least, it communicates, in the upper part of its course, with the *Dihong*, and that part of its water is carried off by that channel. On Captain BEDFORD's voyage up that river, he noticed, eight

miles from its mouth, a wide opening in the forest on the left bank, through which a stream, in the rainy season, probably comes either from the hills or from the *Dibong*. Along this day's route a number of otters were observed; buffaloes, and deer, and wild ducks were numerous; the cry of the *hoolloo*, or small black long-armed ape, was constantly heard —and the print of a tiger's footsteps were noticed. Some of the people declared having seen the animal.

On the following days, the division of the river into numerous channels, and the occurrence of many shallows and rapids, rendered the advance very inconsiderable On the afternoon of the 12th, the river presented three branches, two of which were found impracticable. In order to enter the third, which appeared to be the main stream, it was necessary to clear away a number of large blocks of stone, and employ all hands to force each boat singly over the rapids, by which means an advance of about half a mile was effected in about two hours. In the course of this day's navigation, the action of mountain torrents on the forests skirting the banks was strikingly illustrated. Besides the numerous water courses tracked through the jungle, small clumps of trees were observable, growing upon isolated masses of rock, which had been detached by the passage of a torrent from the circumjacent surface. The sub-division of a river near the hills, and consequent destruction of the forest, seems the natural effect of the accumulation of the mountain débris, which, choaking the beds of the torrents, forces them to seek new channels, and spreads them annually in fresh directions through the woods.

The progress of the 13th was equally tedious and laborious, and two miles and a half only were made with the greatest exertions. About noon, direct advance was stopped by an impassible rapid, and the course diverged through a channel to the left, which led again to the stream above the fall, the banks of the river began here to contract, and the hills

were no great distance. Foot tracks of men and animals were seen, and smoke observed amongst the forests, but hitherto no human dwelling had been seen, and none but a few stragglers occasionally encountered. On the 14th, the width of the river was reduced to between twenty and thirty yards, and as it was not above knee deep, it appeared not unlikely to be near the head of this branch, but an advance, for the purpose of ascertaining the fact, was disappointed by the appearanee of the *Meeshmees*, who showing themselves unfriendly to the further prosecution of the Survey, Captain BEDFORD thought it expedient to return. There are five villages of these people under the first range of hills, extending nearly south-west towards *Pasial* on the *Dihong*. *Zillee* and *Ahundeea* containing from thirty to forty families, *Maboom* containing ten, *Alonga* twenty, and *Chunda* twelve, making a total of eighty families, or about five hundred persons of all ages. They are at variance with the *Abors* on the *Dihong*, and also with the *Meeshmees* on the left bank of the *Dibong*. A party of these people made their apperance on the evening of the 14th, occupying the high bank which commanded the passage of the river, and upon opening a communication with them, it appeared that they were the precursors of the *Gaum*, or head man of *Zillee*, for whose arrival, as well as that of other Chiefs, it was found necessary to halt. The people evinced more apprehension than hostility, and suffered the land operations of the Survey to proceed without interruption.

The people collected on this occasion were variously attired; some of them, like the *Abors*, were dressed in skins, but the most common dress was a coarse cotton cloth ; no woollen garments were seen ; many wore rings below the knee. Their ears were pierced with pieces of metal or wood, and some of them wore semi-circular caps, ribbed with cane. They were armed with *dhaos*, and bows and arrows, the latter are poisoned with the extract of some root. The *Meeshmees* and *Abors* eat together, and acknowledge a common origin. They profess to worship at a different

shrine, which, the former assert, is at a considerable distance. The *Dibong* is said to be divided, on its issue from the hills, into four branches, but above them is a deep and even stream, occasionally intersected by rocks. The source is described to be remote, but none of the villagers could give any account of it, nor of the general course of the stream, from personal observation, as they seldom leave the immediate vicinage of their native villages. The nearest village to the river was *Zillee*, about nine hours' march, from which *Meboom* was half a day's journey distance. The undivided course of the stream, above a small hill, a short way above the spot where Captain BEDFORD had moored, and round which the *Dibong* winds into the low country, was ascertained by actual observation.

In reply to Captain BEDFORD's expressed wish to proceed, the *Meeshmees*, who gradually increased in numbers, coming in from the different villages, insisted on his waiting the arrival of the *Gaum*, or Chief of *Alonga*, to whom, the interpreter pretended, the others looked as their head: while thus delayed, bees' wax, honey, rice and ginger were brought for barter; but it did not appear that the *Meeshmees* were sportsmen, like the *Abors*, and no game was procurable: according to their own assertions, the *Meeshmees* of the left bank are much addicted to the chase, especially those of *Buhbajeea;* whom they describe also as a fierce race of cannibals. The *Zillee Meeshmees* sometimes kill elephants with poisoned arrows, and after cutting out the wounded part, eat the flesh of the animal.

On the afternoon of the 17th, the *Gaum* of *Anundeea* made his appearance, by far the most respectable looking of his tribe; those of *Zillee* and a village called *Atooma*, had previously arrived. In the conference that ensued, the Chiefs endeavoured to dissuade a further advance, chiefly on the plea of danger from the rapids, and the unfriendly disposition of other tribes; but they promised to offer no obstruction. On the following day, accordingly, the route was resumed, when a messenger

announced the arrival of the *Gaums* of *Maboom* and *Alonga*, for whom it was necessary to halt. In the interview with them, fresh difficulties were started, and as there appeared to be some serious intention of detaining Captain BEDFORD where he was, as a hostage for some of the people carried off prisoners by the *Suddeea Gohayn*, he thought it expedient to retrace his steps, and accordingly set out on his return on the evening of the 18th. The course down the stream was rapid and disastrous—some of the boats being wrecked in the falls. On the morning of the 19th, a small stream was passed, called the *Sitang Nadi*, which appears to be a diverging branch of the *Bhanga Nadi*, and the last point where that joins the *Dibong*. On the afternoon, the mouth of the *Dikrong* was reached, and a Survey of the lower part of its course commenced. It is a very winding stream, about fifty yards wide near its junction with the *Dibong*, which is about eight miles above the mouth of the latter. It flows through a dense forest, and its water is thick and muddy.

On the 20th, the voyage was prosecuted up the *Dikrong*, or *Garmúra*, as it is termed by the *Khamtis*, above *Kamjan*, on the left bank, half a day's journey overland to *Suddeya*. The water was much more clear, and ran in a sandy bottom. The current and depth of water in these tributary streams are much affected by the contents of the main stream, the *Burrampooter*, and when that has received any considerable accession to its level, the banks of the smaller feeders are overflowed. The name *Garmúra* is more properly applied to a small stream that falls into the *Dikrong* from a jheel near *Suddeja*; above this, the river is divided into two small branches by an island, near which are the remains of a village and bridge, and a pathway, opposite to the latter, leads to *Buhbajeea*.

After passing the island on the 21st, the *Dikrong* became too shallow for boats of any burthen, and much obstructed with dead trees; the direction was northerly, and glimpses of the hills were occasionally gained.

A few inconsiderable falls occurred, and the current of the river was rather stronger than it had previously been found. The voyage was continued up the river till the afternoon of the 22d, when it became too shallow for the canoes to proceed. Some further distance was explored in a slight fisherman's boat, but the progress was inconsiderable, the water not being ankle deep, Captain BEDFORD therefore returned to the *Dibong*. The *Dikrong* contains several kind of fish of good quality, and in the forests, along its borders, are found yams, superior to most of those cultivated, and several other esculent roots. The orange also grows wild, the fruit is acid, but not disagreeable, and the pulp is of a pale yellow, like that of the lime. Amongst the trees of the forest, is one called *Laroo-bunda*, of which the bark is used to dye cloth and nets of a brownish red tinge, the wood is also used for making canoes. The *Dikrong* was supposed to be connected with the *Koondil*, which is not the case: gold dust has been also, it is said, found in the sand, which does not seem to have been the case in this voyage.

The 24th and 25th of December were spent in examining the eastern branches of the *Dibong*, as far as practicable, and early on the morning of the 26th the Survey was terminated at the mouth of that river."

To Captain BEDFORD's account of the *Dihong* I can add little, but as the mode of travelling has not been clearly explained I should endeavour to describe it. I took with me ten *Gorkhas* of the *Champâran* Light Infantry Corps, and embarked with fifteen days provisions, and my stock of presents in several canoes, each made of a single tree, and the largest capable of carrying ten men in smooth water. The more convenient size for easy management in the rapids is a canoe fit to carry six, which is perhaps a safer boat also than a larger. I did not adopt Captain BEDFORD's plan of making two fast together as a raft, and consequently, though through the awkwardness of the *Sipahis*, a boat was occasionally overturned.

I did not experience any very inconvenient losses. All those who could not aid effectually in managing the boats were made to keep the shore, but even then their help was called for when engaged in a rapid, as the exertions of the boatmen were hardly sufficient to overcome the resistance of the stream. On these occasions, the smallest canoes, manned by two expert fishermen, are pushed through with very little delay, the larger boats drawn up into still water, and forces are joined for extricating one at a time. At a rapid, the form of the bottom is always a very gentle slope on one side, deepening gradually towards the other, where it would be impossible to stop the force of the current. The canoe is run aground on the shallow side, and is dragged up sometimes supported by the water, and sometimes its weight wholly resting on the boulders or rounded stones.

I recollect but one exception where, for the space of four hundred or five hundred yards, the depth appears equal in the whole width, and here the major part of the river, collected in one stream, descends the declivity at the rate of at least ten miles an hour.

It is in coming down the rapids that skill, on the part of the conductor, is requisite: his object is generally to bring his boat to that point sufficiently remote from the shallower side, to secure a sufficient depth of water to avoid touching; but he is almost equally afraid of the violence of the current and of its agitated state on the other.

It is a moment of intense interest, when silence prevailing in the boat, no exertion is made, but by the steersman and his principal coadjutor at the head. They too sit almost motionless, yet forming their judgment while they have a perfect command over her, in the calm smooth stream above, they carefully guide her to the shooting place. The water is clear as crystal, and the large round blocks at the bottom, above which she glides with the velocity of lightning, seemed removed but an inch or

two from the surface threatening our frail bark with instant destruction. In the case of any accident happening, good swimming would avail but little.

My shelter at night was such a small paul tent as could be stowed in the canoe, and the men either slept without or collected sufficient grass and reeds to build themselves a slight protection from the dew or rain.

I did not note anything very remarkable in my passage up, unless it be the state of the left bank. About six miles below, where the river emerges from the hills, its direction is suddenly changed from E. *to* SS. W., and from that corner the forest marking the ancient bank recedes from the edge; whence, lower down, it is seen at a considerable distance. It returns again to the bank of the river, ten miles below the bend. Within the extent thus marked by a semi-circle of trees, the ground is high—higher by several feet than the river now rises in the highest floods, but it is evidently an alluvial deposit, being almost entirely sand. Within it there is one insulated patch of tree forest. The *Míris* declare that the great flood left it in this state; their villages, which were utterly destroyed, were situated within this same space, and certainly the appearance I have described is highly corroborative of their assertion. I halted at *Shigáru Ghat*, opposite to Captain BEDFORD's old mooring place.

The *Menbú* people had notice of my arrival, and I soon saw two or three of their Chiefs, accompanied by another, who was said to have rank among the *Bor Abors*.* They seemed to be averse to it, yet gave their consent to guide me to their villages, and I felt confident of being able to

* *Abor* is an *Asamese* word; they call themselves *Padam*. *A* signifies privation, and *bor* the contraction for a verb, signifying to submit to, or become tributary. Thus there are *Nagas* and *Abor Nagas*—*i. e.* independent *Nagas*. *Bor* is bara, great.

start with them, when the *Pasu Abors* made their appearance from the opposite bank, renewed the business of haranguing, and, after a long debate, turned the tables against me. My *Menbú* and *Bor Abor* friends now insisted that till we restored the *Míris* to their former places, at the mouth of the *Dibong*, they could not, and would not venture to introduce us among their tribes. I was thoroughly convinced of the truth of my accounts of the impossibility of navigating the river more than one or two day's journey within the hills, and thought it would be folly even to attempt this, with the small guard I had, against the wishes of the *Abors;* it might be the means of defeating all future attempts.

I was now some time inactive at *Sadiya*, doubtful whether it were not better to return to *Súbanshiri*, even with the poor prospect I had of success there.

In the S. E. quarter, Captain BEDFORD was present, with the Rangpur Light Infantry, to pursue his researches wherever practicable. I had communicated with him, and found that he considered me as interfering in some degree with his researches, and as he expected to return immediately, I thought I was obliged to accede to his request that I would leave the eastern branch of the *Lohit*, the *Brahmaputra*, and the far-famed *Kund* for his investigation.

Amongst other visitors who were attracted to *Sadiya* by the good reports which began to be spread of the English character, was the *Lúri Gohayn*, brother of the *Sadiya* Chief. He had taken alarm on Lieutenant BURLTON's first visit, and fled from his flourishing villages, in the neighbourhood of *Sadiya*, to take refuge in the wild jungles below the eastern hills, from the anticipated ill treatment of the Europeans. I found this man more communicative and better informed than the natives with whom I had had intercourse, and I soon arranged a plan with him for visiting his

village, with a view of learning from the neighbouring *Mishmis* something more definitive about the *Lama* country, or, in short, to extend the field of our knowledge, and turn to account any new opportunity that might offer.

In this excursion I was accompanied by Lieutenant BURLTON. He had, on a former trip, reached *Sonpura*, about twelve miles east of *Sadiya*, where he had found an effectual bar to his further progress in large boats in the shallows and rapids.

In the following passage, which appeared in an extract published in the Government Gazette of 21st September, 1826, from Captain BEDFORD's Journal of a Voyage up the *Brahmaputra*, the Editor, and perhaps the Public, seem to have formed notions of this river not altogether correct. "The *Brahmaputra*, although of considerable breadth and depth in some places, is hence constantly broken by rocks, separated into different small branches by islands of various extent, and traversed by abrupt and numerous falls." The nearest hills to *Sadiya*, by the course of the river, are upwards of forty miles distant, whether those near the *Kund* or those on the *Digaru*, a principal tributary on the north bank, and in this extent the river does not intersect any rocky strata, but to the distance of thirty to thirty-five miles from the first ranges, the torrents of the rainy season bring down an immense and yearly accumulating collection of boulders and round pebbles of every size, which, blocking up the river, are the causes of its remarkable feature of separation into numerous and diverging channels, and of the difficulties of navigating it. Many of the stone beds have been so long permanent, that they are not only covered with grass jungle, but have a few trees growing on them. The extreme banks, both of the north and south, are clothed with a dense tree jungle, which is rendered almost impervious by rank underwood. The general direction of the stream is from E.N.E. to W.S.W.

The rapids are very numerous; they are invariably situated where a large deposit of stones encroaches on the river. The most formidable one encountered by us was that at the mouth of the *Súhatú*, a branch which separates from the main river eight miles below the *Kund*, forming an island of about fourteen miles in length. The fall at any single rapid seldom equals five feet, which is carried off in a distance of from fifty to two hundred yards; the violence of the current at the principal channel of the *Súhatú Mukh* was such that we could not attempt the direct passage, but passed by a circuitous route across the main river, with the sacrifice of much time, to a small channel on the eastern side.

The *Karam*, up which our course lay, falls into the *Súhatú* nearly four miles above its mouth. Here though very much disinclined to part with our boats, we were convinced of the necessity of leaving some of them, and even with such of the smaller as we retained it proved difficult to advance up the minor stream. It was often found necessary to open a passage up a shallow by removing stones from the bottom. Our route, while the boats remained with us, was generally through the jungles on the bank; but such a survey as, under these circumstances, I could make, I did; estimating the distance according to time, and taking what bearings the closeness of the jungles permitted. A Perambulator would be battered to pieces, and the objection to a chain would be the necessity of wading across every two or three hundred yards, and the want of open ground which frequently occurs. The only sign of population that we saw on our journey were parties of priests *(Khamti)* moving from one village in the jungles to another. We were obliged to relinquish our boats entirely where the *Karam*, being formed of two branches, has scarce any water in the dry season at places where it is choked by a collection of stones. We found the *Lúrí Gohain's* village, of ten or twelve houses only, and their cultivation scarcely equalling their need; it was at the base of a low hill, which

is attached to others rising in height. Those on the opposite bank of the river appeared not more than ten miles distant, and on the angle a little E. of N. we were assured that the *Kund* was situated. All that we had added to our stock of knowledge, was the certainty of the *Brahmaputra* leaving the hills, where its exit had been pointed out from a distance, and by passing in an easterly direction, south of the great line of snowy peaks, we had ascertained that there is no material break in them; but the weather would not permit the contemplation of the splendid scene which is opened in the cloudless skies of the winter months.

We learned that the *Lama* country, on the banks of the *Brahmaputra*, was but fifteen days distant, and the upper part of the *Irâwadi* (whence the *Khamtis* emigrated to this side,) about the same, but our provisions were nearly exhausted; and we saw that we were not likely to procure any supply here.

We saw several *Mishmis*, wild-looking but inoffensive (rather dirty) people. The dress of the labouring men being as scanty as that occasionally used by Bengalee boat-men, and perhaps not quite so decent, scarcely deserves that name. The richer have coats of *Thibetan* coarse woollens, generally stained of a deep red, and sometimes ornamented with white spots, which are preserved from the action of the dye by tying. The most remarkable article of their equipment is the ear-ring, which is nearly an inch in diameter, made of thin silver plate, the lobes of the ears having been gradually stretched and enlarged from the age of childhood to receive this singular ornament. A pipe, either rudely made of bambu or furnished with a brass bowl, imported from China, through the intervention of the *Lamas*, is never out of their mouths, and women, and children of four or five years of age, are equal partakers of this luxury. The men are generally armed with a spear or straight sword.

On our return to *Sadiya*, I found Captain BEDFORD ready to depart on his visit to the *Kund*. Affairs with the *Abors* were precisely in statu quo, and the enmity between the *Khamtis* and northern *Mishmis* rendered the *Dibong* unsafe. I resolved therefore to return to the *Lúri Gohain's* village, and thence endeavour to push on towards the E. and S. and visit the *Iráwadi*.

On my second visit, and proposition, actually to set out in an adventure to the *Bor Khamti* country, which had been talked of before, when we were at a loss for provisions, as perfectly feasible, the *Lúri Gohain* and his people informed me of various obstacles which had not yet been alluded to. The snow on the high range of mountains to be surmounted in the route, could not be passed before the month of April or May, (and there was truth in this objection,) the country was not prepared for such a trip—very great risk would be run by venturing amongst the *Singfos*, who were removed from the sphere of our influence, or rather from that proximity to our force which should incline them to dread us.

Tain Mishmis, from two days journey beyond the *Kund*, had arrived, and I considered my trouble as partly rewarded by the information derived from them. PRIMSON and GHALUM, the two Chiefs, who afterwards accompanied me in my excursion up the river, communicated freely what they knew, and the former enabled me to lay down the course of the river as far as the *Lama* country. I also undertook an excursion to the village of the latter.

On setting out, we continued through the same heavy tree jungle as we had passed through from the *Karam*, and skirting the base of the low hill in a N. Ely. direction, we crossed the *Laih* under the foot of a higher range. A path can be traced, but is evidently little frequented.

Turning more east, we ascended a considerable height up a very steep and rugged path, and arriving at a small patch of cleared ground, where the trees had been felled, and the underwood burnt preparatory to cultivation, we turned round on the most splendid view I had ever beheld. The *Brahmaputra* was visible at no great distance on the right, emerging from a long narrow chasm in the hills. On its northern banks, the low hills, the tops of which had been visible from *Chala*, were seen running along its edge, thence stretching away to the right, and varying in size and character from the mere wooded ridge to the towering naked peak, resplendent in its clothing of snow, and glittering in the sun-beams, until they gave place to spreading plains.

Our host for the night was the Chief of *Thethong*, of which village we saw but two huts, and imagination can scarce picture a situation more wild than they were placed in. The slope of the hill where they were built was full thirty degrees; the huts were of great length, and about twelve feet broad—the beams of the floor resting on one side on the hill's face, and on the other upon stakes driven into the ground below. The roof is of the lightest materials, in order that the smoke may have free egress, and it hangs down, projecting on each side to near the floor, to give protection against the wind. Within, on one side, rows of bamboos extend horizontally, the entire length laden with the blackened skulls of all the animals on which the owner had, in the course of his life, feasted his friends; cross fences of bamboo mat, divide it into small apartments, in each of which are one or more hearths glowing with burning faggots. Both house and inmates were black with dirt and smoke. Outside the door, it is but necessary to turn the back on the hut to suppose that we are far removed from the habitation of men, in the depths of some wild forest—so little does the immediate vicinity of the dwelling display any sort of care.

In the evening a storm of wind and rain came on, and the thunder rolled in awful peals, echoed by the surrounding walls of mountain. On the morrow heavy and continued showers forbad exit from the house, and on the third day we were, in the same way, involuntary prisoners. I was assured that it would be necessary to wait some time after the cessation of these heavy rains before the rivulets between us and the *Taïn* hills could possibly be crossed, and I was also reminded that if they should continue, we should very soon find the *Laïh* so swollen as not to admit of our fording it on our return, and as to procuring provisions, however hospitable our host seemed, I found that he watched his very slender store with great and jealous vigilance. The poor fellow, indeed, could have ill afforded to feed my people for one day. Under these circumstances, I felt well pleased that some intermission of the weather permitted me to regain my more comfortable habitation at *Chalí* on the fourth day. Here again I was detained by the state of the *Karam*, which could not be forded.

I shall hereafter have occasion to allude to the opportunities I have had of acquiring a knowledge of the rivers between *Asam* and *China*. I will therefore, in this place, merely mention that one of the higher class of *Khamtis* present, had been a resident at *Yunan* for a period of eight or nine years. He gave me an account of the stages, rivers, and cities, agreeing closely with the account given to Dr. BUCHANAN by the *Bhammo* Governor. He did not go to *Santafou*—but leaving *Bhammo* he went in three days to *Múngwan* on the east bank of the *Namiun;* thence in five days he reached a larger town called *Mungti*, and thence, between that place and *Mangmen*,* he crossed the *Namkho*, which he describes as equal

* *Mang*, in the *Sham*, or *Khamti*, means country or town.

in size to the *Irawadi* river. The *Namkho*, he says, divides a *Sham* province from *China* proper.

These are most probably the same places with BUCHANAN's *Mowun*, *Maintu*, and *Momieen*; however, either the Doctor's informant was mistaken in the *Chinese* names, or my friend had forgotten the positions of the towns relatively to the river (*Namkho*). I would not venture to hint the possibility of the former (which, by the bye, may have occurred in copying), had not a *Chinese* from *Yunan*, who was some time with me, called *Mungti*, *Feng ye chou*, which would make my friend the *Sham* perfectly correct. I must add, that till I came down to *Calcutta* I never had any opportunity of seeing anything of Dr. BUCHANAN's information. The *Namkho*, it is scarcely necessary to add, is evidently the *Nou Kyang*. I cannot quit the subject without expressing my admiration of Mr. KLAPROTH's boldness in turning all the water of the *Sampo* into the *Bhammo* river, concerning which we can so easily here consult sufficient authority. MUNGYAH, my *Burman* attendant, instantly answered to my question about its size, that it is equal to the *Dikho*, one of the rivulets of *Asam*.

My return by water was very rapid; the first day I reached the *Suhatu*; the second, starting after breakfast, and halting some time to take bearings at three places on the way, I reached *Sadiya* in the afternoon, having performed upwards of thirty miles that day. The only incident I have to mention, and that only interesting as conveying a further idea of the nature of the rapid, is my descent of that at *Suhatu Mukh*, where there are three separate channels. As the river had risen considerably, I expected to find the declivity in the principal channel, which is not interrupted by any shallow, less than when I passed up, and my boatmen readily consented to shoot it. Its agitated appearance, however, when we arrived near the brink, induced them to change their course for

the middle channel, which is interrupted and crooked. The first time we struck, I perceived a crack in the bottom, under my feet, at least a cubit long, and this visibly opened every shock we received, and indeed the whole descent was a succession of such shocks, so that with the water received by the leak, and that by the waves washing over, we were obliged to stop some time to bail out and lighten our canoe.

Captain BEDFORD's account of his voyage was noticed in the Government Gazette of September 21, 1826, and the extract then given has been reprinted in WILSON's "Documents illustrative of the Burmese War," to which I refer for a very interesting narrative. I propose to give here an abstract of the Geographical results.

"On the 10th March, the course pursued left the main stream, and proceeded up the *Suhatu*, a detached branch on the "*left*" bank of the *Brahmaputra*, and, like that, intersected by rapids, and endlessly subdivided by islets "formed of accumulations of boulders." No signs of life were observable in this part of the journey, and although the banks were covered with thick forests, few birds or beasts disturbed their solitude. The *Suhatu* forms, with the *Brahmaputra* or *Bor Lohit*, an extensive island, the greater part of which is impenetrable forest; but there is one village in it of some extent, named *Chata*, inhabited by *Mishmis*, who are of more peaceable habits than the mountain tribe (on the *Dibong*) of the same appellation. After a tedious voyage of eighteen days, during which nearly forty rapids were passed, the course returned, on the 28th of March, to the *Bor Lohit* or *Brahmaputra*. The *Suhatu* opens above a rapid in the main stream, which is pronounced by the Natives impracticable, and it has every appearance of being so. And at this point, the river, now confined to a single branch, takes a northerly direction and passes under the first range of hills. It runs in one part close below a perpendicular

cliff of this range from sixty to eighty yards high, and covered from base to summit with soil and forest. The current at this point is strong, and its volume considerable; large rocks (stones) project, from four to six feet above the current, which have evidently been rolled down from a distance, as the hills near at hand, from two hundred and fifty to four hundred feet high, are composed of earth and small stones. The banks are every where clothed with forest, in which the *Dhak* or *Kinsuka (Butea Frondosa,)* is conspicuous. The left bank of the river, below where it issues from the hills, is composed of loose granite blocks, occasionally resting on a partially decomposed rock; the strata are in some places horizontal, but in others they are much broken, as if undermined and fallen into the stream. In a dry stone bed was observed a large detached block, twenty-five feet long, eighteen high, and nearly the same breadth. It is difficult to conceive by what means so ponderous a body could have been precipitated into its present position. There are several other large rocks immediately below where the *Lohít* issues from the hills, by which it is separated into several small channels; but at (above) the point where these unite, its general breadth is two hundred feet, and it flows with great force and volume; the course of the river behind the first range is concealed from view by a projecting rock jutting into the river, beneath which it rushes, as from a fall, with much foam and noise. Behind this, the river is said to be free from rapids, and to flow more quietly: the river is also said to change its course behind the first range, and to flow from the south-east under some small hills, behind which a higher range appears with the snowy mountains in the distance."

"After some ineffectual attempts to open a passage to the supposed head of the river, the *Deo Pání*, or *Brahma Kund*, the divine water, or well of *Brahma*, which it was known was not remote, and after some unsuccessful efforts to reach the villages, the smoke of which was

perceptible on the neighbouring hills, a communication was at last effected with the *Míshmís of Dillí*,* a village of about a day's journey from the left bank, as well as with the *Gam*, or chief of the village near the *Brahma Kund*, in whose company a visit was paid to the reservoir on the 4th of April. This celebrated reservoir is on the left bank of the river; it is formed by a projecting rock, which runs up the river nearly parallel to the bank, and forms a good sized pool, that receives two or three small rills from the hills immediately above it. When seen from the land side, by which it is approached, the rock has much the appearance of an old gothic ruin, and a chasm about half way up, which resembles a carved window, assists the similitude. At the foot of the rock is a rude stone seat: the ascent is narrow, and choked with jungle; half way up is another kind of seat, in a niche or fissure, where offerings are made; still higher up, from a tabular ledge of the rock, a fine view is obtained of the *Kund*, the river, and the neighbouring hills; access to the summit,† which resembles gothic pinnacles and spires, is utterly impracticable; the summit is called the *Deo Bári*, or dwelling of the Deity. From the rock the descent leads across a kind of glen, in the bottom of which is the large reservoir, to the opposite main land, in the ascent of which is a small reservoir, about three feet in diameter, which is fed by a rill of beautifully clear water, and then pours its surplus into its more extensive neighbour below. The large *Kund* is about seventy feet long by thirty wide. Besides *Brahma Kund* and *Deopání*, the place is also termed *Prabhu Kuthár*, in

* *Dilling*, or *Dilong*, is the only name resembling *Dillí* among the neighbouring villages, but it is a hard day's journey from the *Kund*, and when I enquired there they did not know of the visit of Captain B.'s people. They thought it might be *Thethong*. Captain BEDFORD places *Dillí*, however, near my *Dilling*.

† Though inaccessible from below, a path above crosses the *Deo Pani*, which I have twice passed; it might be very difficult to clamber down; but upwards, from where I crossed it, it appeared easy to get up the mountain, even to the head of the rill.

allusion to the legend of PARASURÂMA having opened a passage for the *Brahmaputra* through the hills, with a blow of his *kuthâr*, or axe.

Want of supplies prevented a stay at this point, and rendered a prompt return to *Sadiya* indispensable, which was effected by the 11th of April."

The *Asamese* distinguish the *Prabhu Kuthâr* (the *Kund* now visited) from the holy *Kund*, in which the river has its origin; but they have no clear idea of the situation of the latter, and they universally declare it to be utterly inaccessible to man.

It is much to be wished that some one adequate to the task would follow up Colonel WILFORD's enquiry, now that we are possessed of much more accurate information. At present there appear so many discrepancies between the *Hindu* legends, and facts, that we are quite at a loss: however, Colonel WILFORD also recognises the famous chasm or pass of *Prabhu Kuthâr* as totally different from the *Kunda*. The pass, he informs us, is, according to the *Kshetra Samâsa*, sixteen *yojans* or sixty-four kos to the eastward of *Godagram*, or *Gorganh*, (it is, in fact, about one hundred and fifty miles distant,) and from the pass to the *Kunda* is a journey of eight days. The continuation of Colonel W.'s discussion contains a singular mixture of what closely resembles the truth, with other matter which we cannot reconcile with what we know to be fact.

* The *Asamese* have no notion that a pilgrimage was ever made beyond the *Prabhu Kuthâr;* but if it ever were, I know, from the difficulties of

---

* Asiatic Researches, XIV. p. 424. "From the pass to the *Cunda*, the journey is always performed in eight days, because travellers must keep together, on account of the inhabitants, who are savages, great thieves, and very cruel. There are fixed and regular stages, with several huts of the

the way, that it would be absolutely impossible to march nine or ten kos a day, or indeed more than one-fourth of that distance, through those rugged hills. The account of the entire distance to the river's fountain head, however, may not differ materially from the truth, and the *Mishmis* are not ill described. Tigers, however, are not to be found in their hills, and it is highly improbable that troops were ever sent into so difficult a country to chastise people who, in their own haunts, have so great an advantage.

Correct as his information proves of the situations of the *Prabhu Kuthára* and *Kunda*, Colonel WILFORD quite surprises us further on by telling us that (p. 455) the *Kunda* of BRAHMÁ is acknowledged to be the lake *Mansarovara*. Again, considering the state of our Geographical knowledge when he wrote, the description of the lesser and greater *Lohita*, the former being known as the *Bonash* or *Manasa*, and the latter also called *Sama*, evidently to be recognised in the *Dihong*, inclines us to believe that reliance may be placed on the authorities quoted by him, although we cannot overcome the difficulty of making the *Prabhu Kuthár* pass subservient to the passage of the *Brahmaputra* into *Asam* from the *Mansarovara* lake.

On my return to *Sadiya* I found, amongst the numerous visitors there, all the *Singfo Gams*, acknowledging our sovereignty, and likewise Ambassadors from the tract beyond the *Irawadi*, in latitude twenty-five to twenty-six; *Burmans* and *Shams* were present—the latter from *Mungkhang*, west of the *Irawadi*, in latitude twenty-five—the former from various parts of their own empire, and from the source of the *Irawadi* we had many *Khamtis* among the population of the place. From *Yunan* we had two *Chinese*, who

---

natives. The Kings of *Asam* are sometimes obliged to chastise them, but in general they contrive to secure the friendship and protection of their Chiefs, by trifling presents. The country is covered with extensive forests, with a few spots cleared up, with very little industry and skill. Tigers are very numerous, and very bold."

were taken prisoners with the *Burmans* at *Rangpur*, but they were not present with the Ambassadors, having been detained by some accident on the river.*

It may be supposed that I did not neglect to take advantage of these opportunities to investigate as fully as I was able the probability of any connexion of the *Irawadi* with the *Sampo*, but though the existence of a large eastern branch of the former river, hitherto unknown, was proved, there appeared every reason to conclude, both from the information of these various tribes, and from the want of magnitude of any of the branches of the *Irawadi*, that the *Sampo* could not possibly have its exit to the ocean by this channel.

The *Bisa Gam*, with the *Singfos* from *Húkúng*, constructed several maps for me of that valley, and the route to it from *Sadiya*; and some of them who had travelled to the sources of the *Dihing*, confirmed the accounts previously received from the *Lúri Gohain*, of the route to the *Khamti* settlement on the *Irawadi*.

The season was too far advanced now for an expedition to the *Mishmí* hills to the eastward, as the frequent rains made the state of the rivulets so uncertain. My scheme of crossing to the *Irawadi* was considered too hazardous in the present state of our relations with the *Singfos*. It remained then only to wait patiently at *Sadiya*, for the return of the cold season, and in the mean time to undertake what little was practicable in the way of survey in the neighbourhood. But the rivers could afford the only means of seeing the interior of the country, the dense jungles being

* Amongst the Ambassadors were *Shams*, wearing the *Chinese* dress, who were in the habit of passing the frontier, were acquainted with the language, and dwelt within the boundaries of *Yunan*, as they are exhibited in our maps.

impassable, and of the rivers, the *Tenga* alone claimed interest; a survey of the *Dibúrú*, sufficient for practical purposes, having been recently made by a Native surveyor of Mr. SCOTT's, from whose field books I protracted a map.

The *Tenga Páni*, like all the rivers in this quarter, winds through a dense tree jungle: its breadth at the entrance is one hundred yards, diminishing soon after to eighty, the first three and a half miles the water is perfectly smooth and the current moderate; beyond this the rapids are numerous, and it is no longer possible to proceed in any other boats but canoes.

Latao, a *Singfo* village, of six or eight houses, is the only inhabited spot we saw: it stands at the angle of a deep bend, and may be seen from the distance of half a mile: it was surprised by Captain NEUFVILLE's party in 1825, and now, deprived of his slaves, I found the Chief, (a fine old man, of a very communicative disposition,) reduced to the necessity of guiding the plough with his own hands. Many of the *Singfo* villages had suffered equally with this, and but for the trifling supplies which we were able to afford from our stores at *Sadiya*, a great number of the scanty population would probably have been compelled to emigrate to *Húkúng*.

Fish abound in the rapids of the *Tenga;* and river turtle, of a very large size, are occasionally found and eaten by the *Singfos*, with great relish. I witnessed the capture of one of these creatures of the largest size—it was seen entering a little creek formed by a fallen tree, and a canoe manned by three *Singfos*, was instantly planted across the opening. One of them watching his opportunity, suddenly leaped on the back of the animal which had descended to the bottom of the pool, and a knife

being handed to him, he dipped his head and arms under water, and cut two large notches in its hinder part and made fast to it a green pliant cane, with which it was easily pulled on shore; but cased in a coat of mail and armed with sharp teeth, at least half an inch long, the turtle was not yet mastered, and advantage was taken of its attempts at self-defence to secure its mouth by presenting a large bamboo, which it constantly snapped at. A man sitting on it, next bored the paws, which being bound on the back with cane, reduced the poor turtle to a helpless condition, and he was put on board the boat.

The early settlements of the *Khamtis*, when fifty or sixty years ago they first crossed the mountainous barrier at the head of the *Dihing*, and procured the permission of the *Asamese* Raja to reside within his territories, were here upon the *Tenga Pání;* but there now remains no vestige of the former populous state of its banks: an uninterrupted tree jungle continued as far as I could explore it. We passed the *Bereng*, which is a narrow rivulet, branching off from the *Karam:* the *Marbar* we also passed, on which are one or two small villages of the *Khamti* Chiefs, who, having been concerned with the *Singfos* in a plundering incursion, fled from *Sadiya* on the approach of our force, and latterly, we found the river so much reduced in breadth, and so choaked with fallen trees, that further progress, even in the smallest canoe, was impracticable.

Bearings on the survey peaks to the north afforded means, together with latitudes, for correcting this survey, in which, from the nature of the banks, no measurement could possibly be attempted.

I have omitted in the proper order of time to notice Lieutenant JONES's survey from *Rangpur* to *Eísa*, where the troops received orders to

advance towards the frontier. Lieutenant JONES was placed in charge of the cattle, with directions to march to *Borhath*, and thence either through the *Bengmora* district to *Sadiya*, or along the *Borí Dihing* to *Bísa*, whichever should be found practicable, and, though harrassed by the nature of his charge, he surveyed the route very successfully.

I have now come to the close of the proceedings of this season. In the rains, preparation was made for what appeared to be the most feasible proposition for the next, which was to penetrate to the *Lama* country on the heads of the *Brahmaputra*, where, from the *Lamas*, we might at least learn something definite respecting the course of the *Sanpo*, whether eastward of *Lhassa* it bends to the south, or whether it continues eastward, and passes round the sources of the *Brahmaputra* and *Irawadi*.

Maps were prepared from the information received from various sources. One, of the route to the *Lama* country and to the sources of the *Irawadi*; and the other, of the *Húkúng* valley and route of the *Burmans* from *Múngkhúng* to *Asam*; the former has been found as correct as a document compiled from similar data could be expected; and since I had greater facilities in preparing the other, in being able to compare the accounts of so many people, I feel confidence in its general accuracy also. I shall now pause awhile before proceeding with an account of my adventures of this season, and endeavour to give such a description of the tract about *Sadiya*, as will enable those who have not the opportunity of referring to my large Map, to form some idea of the peculiar features of the country and its scenery.

The termination of the valley of *Asam* is a spacious level plain, of a quadrangular form, in the midst of which is the town or village of *Sadiya*, situated on the *Kundil* nullah, two miles inland from the *Brahmaputra*,

and thirteen miles east from the point of confluence of this stream with the great *Dihong*.

The plain is intersected by many rivers, the principal of which are the *Brahmaputra*, issuing from the pass of the *Prabhu Kuthár*, which is about forty-two miles distant in a direction a little north of east: the *Noa Dihing*, which emerges from the hills at *Kasan*, about forty miles distant in a south-easterly direction, and joins the *Brahmaputra* about seven miles beyond *Sadiya*: the *Dibong* intersecting the higher angle of the quadrangle, which immediately north of *Sadiya*, reaches the latitude of 28° 15′, and the *Dihong* pouring its copious supplies from a conspicuous break in the range which skirts the plain running from the same angle to the south-west. The *Kharam* and *Tenga Páni*, with numerous other petty rivulets, have their rise in the mountains south of the *Prabhu Kuthár* and they run nearly parallel with and near the *Brahmaputra*, the former falling into the *Suhatu*, nearly opposite to where the *Digaru*, from the northern mountains, descends in a torrent to the northern branch, and the latter having its mouth near that of the *Noa Dihing*. South of the plain, the *Bori Dihing* separates it from the *Naga* hills, running nearly westward. The quantity of cultivation within this space is very small. The villages of *Sadiya* do not extend more than six miles between the post and the *Dikrang* river. Beyond *Sadiya*, on the north side of the river, the tract is an uninterrupted jungle to the foot of the hills, and on its south side the little village of *Latao*, that on the *Suhatu* island, of the *Tao Gohain*, and a *Khaku* village near the *Dihing*, form mere specks in the widely spread wilderness.

The mountain scenery of *Sadiya* would form a noble subject for a panorama, though the distance of the hills is rather too great for the larger features required in a detached picture. To the south, the high *Naga* hills bordering *Asam*, beyond the *Bori Dihing*, lift their heads

above the tree jungle of the opposite bank of the *Brahmaputra;* to the W. and S. W. the ranges are too distant to be visible; but in the N.W. they rise to a considerable height where the mountain *Reging* of the *Abors* towers above the *Pasí* village; thence there is a sudden fall, and in the opening of the *Dihong* the hills diminish to a comparatively small size—over which, however, a cluster of remarkable peaks, clothed in heavy snow, are occasionally to be seen in the very clear weather of the winter months, bearing about 310°, or nearly north-west; they are evidently south of the *Dihong*, in its course from W. to E., and are very distant. On the opposite side of the bank rises a conical mountain (which at the mouth of the *Dihong*, and in that river, forms a most conspicuous object): the *Abors* call it *Regam*, and declare that it is the residence of a sylvan deity. The range continues round to the north overtopped near *Regam* by a high-peaked ridge of six or seven thousand feet high, retaining its snowy covering only during the colder months. Nearly north, the tops are sometimes to be distinguished of a range at a considerable distance, which, from more favorable points of view, is seen to be a continued line of heavy snow; the opening of the *Dibong* is marked by a corresponding fall of the hills immediately to the north. Turning to the N. E., a more interesting group presents itself; the first and highest in the horizon is the turret-form, to which we have given the name of *Sadiya Peak;* its base extends to the *Dibong* on the left, and to the right it covers a considerable extent, allowing a more distant class of mountains to peep above its sloping sides. The next is the huge three-peaked mountain called *Thigrítheya* by the *Míshmís*, a magnificent object from the singular outline; it is succeeded by a wall always streaked with the pure white of its beautiful mantle, after one or two minor yet interesting peaks. *Thathutheya*, a high round-backed ridge, rises high above the ranges near the *Kund*, or *Prabhu Kuthar;* there is then a fall, but the gap is filled with mountains low in appearance, because they are distant, and the channel of the river is not there as has been supposed, though that

is the place of its issue to the plains, but in fact winds round the groupe situated in this gap and running first to the N. W. till it washes the base to *Thathutheya:* it then traverses back to the southward. Immediately to the east, the ranges at the distance of forty-five miles are high, and snow is seen on some of them throughout the cold season, but the last peak in that direction is the loftiest to be seen (of those whose heights have been ascertained,) and so remarkable and magnificent a tower it is, that it has been ever known amongst us by the name of *Beacon,* and it has been seen* at the distance of one hundred and thirty miles. *Turret Peak* is also remarkable near to *Thathutheya* in the horizon, but distant, that it ought not to be forgotten. Beyond *Beacon,* or *Dapha Bhúm,* as it is called by the *Singfos,* the lofty mountains suddenly retrograde to a considerable distance, and form a deep basin, the southern and eastern sides of which are alone visible; through the centre of this basin, the *Dihing* winds, having its sources in the most distant point.

On the 8th of October, the river had fallen considerably, and fair weather had apparently set in when I started. I took with me ten young *Khamtis* from *Sadiya,* armed with muskets, and fifteen to carry my provisions, my sextant, and a few clothes, and, to save the labor of building a shed for protection from the heavy evening dews, I took as far as the *Luri Gohain's* village, a small tent. Lieutenant BURLTON had been appointed to join me, but I was not informed of this till I had advanced five or six days' journey, and he was still at *Bishenath.* Even so small an accession of strength to our party as his company would have given me, might have given my labors a successful termination: for with one staunch friend who knew how to use a double-barrelled gun, I should have been very ill inclined to suffer myself to be bullied by the barbarian *Míshmís:*

* By Lieutenant BEDINGFELD.

as it was, I felt confidence only in one point, which was, that in a case of emergency, I should stand the best chance of being deserted by my *Khamti* followers.

I took one *Hindustani* to prepare my food, and one *Burman* to supply his place in case of his inability to proceed with me. One of the *Chinese*, whom I have before mentioned as taken prisoner at *Rangpur*, was readily induced to accompany me, by the prospect of reaching *Yunan* from that part of *Thibet* which we expected to enter, where, as I had already ascertained, some of his countrymen are always to be found.

The *Lúri Gohain* had left his village, at the foot of the hills, to the care of some of his people, and had resided with us at *Sadiya*, from the commencement of the rainy season. He now accompanied me, and to his arrangement and good management I looked for success, as he had more communication with the *Míshmís*, and possessed more influence with them than any of his brethren. A fine young *Asamese* noble had often expressed his wish to take advantage of my escort to pay a visit to the holy *Brahmakund*, and he had induced the good old *Bor Gohain* to consent also to join us. They, with their *Brahmun*,* who was to officiate at the *puja*, for the proper performance of which the *Puranas* had been consulted; and with their followers considerably augmented my party, and afforded much entertainment by the difficulties into which they were thrown on the journey, (particularly when they encountered leeches in the jungles,) and the wonder they exhibited at the novelties of the rapids. The scenery improved greatly as we advanced eastward, and received the happiest effect from the delightful clearness of the atmosphere, and the

* I strongly suspect that Captain BEDFORD was mistaken in supposing that the *Míshmí* Chiefs near the *Kund*, have anything more to say or do with the ceremony, than taking possession of the offerings.

brightness of an unclouded sky. Proceeding a few miles beyond *Sadiya*, it is soon perceived that the *Sadiya* peak is not a single tower rising high into the skies, but has that appearance from its being the end of a wall-like ridge running eastward, and indeed, when seen from the *Suhatu Mukh*, its lofty peak is no longer to be distinguished with certainty in the long wall, which reaches nearly to three-peaked *Thigrítheya*. That mountain is now finely developed, and the ruggedness of its outline, seen from this near point of view, increases its improving effect. From hence, too, the heavy snows before alluded to, north of *Sadiya*, which are scarce seen from the station, overtopping the nearer ranges, are beheld stretching far to the east and west, filling up the low gap near the issue of the *Dibong* to the plains, and the direction from the opening of the *Dihong* affording an uninterrupted view up it to the N.W. affords a fine prospect of its faint and distant groupe of snow-clad peaks. But the proximity of the northern mass of mountains does not permit us to form any accurate idea of the disposition of the further ranges, or of the nature of the country between us and *Thibet*.

When we reached the *Kharam*, we found that the floods of the rainy season had re-opened a channel which had been long dry, and known as the *Morí*, or dead river, by which expression they designate those branches which, by the constant changes going on in these violent mountain streams, have either dried up or lost their consequence. When within the *Kharam*, the changes in the grouping of the peaks brings forward a noble sugar-loaf peak, and those ranges near the *Kund*, now grown so much nearer, look more wild and bold. A small telescope enabled me, at *Challa*, to distinguish clearly a solitary pine here and there, stretching its black area forth in the midst of the white field.

The bark of the great deer, and the shrill cry of the fishing eagle alone disturb the silence of these wilds. And a large insect, their inhabitant,

makes a reiterated whizzing like the sound of some vast fly-wheel buffetting the air at every revolution. Tigers are numerous.

The further preparations necessary at *Challa*, were to give intimation of our intended visit to the friendly *Taïn* tribe beyond the *Kund*, to prepare baskets for carrying within the hills, and to get ready for the journey the *Gam* of the *Míshmís* of the village, and two or three of his people, who were to go with us as interpreters—I had observations for latitude which gave for my house, in the centre of the village, 27° 48′.

From the *Taïns* we received an answer, expressing their pleasure at our approach, and by the 19th October, we were ready to set out, having completed for each man a small basket, made flat to fit the back, with a small supporter of wood for the shoulders, and we had a stock of twelve days' provisions. The only instruments that I carried were, a sextant and false horizon, a good compass, a Woollaston's thermometric barometer, and a barometer of the common kind; the former of these two I found had its thread divided, by inverting it in carriage, and consequently it would not give the difference of height from *Sadiya*, and, though I afterwards enjoined the utmost care to the man whose business it was to carry it, invariably found on my arrival at a new station, that some unlucky inversion, in the course of the journey, had similarly deranged it, nor can this be wondered at, seeing that all a man's care was employed in preserving his own limbs from injury by a fall from the rugged precipices we occasionally clambered over. The tube of the other barometer lasted a very few days.

The first night we halted in the bed of the *Laït* rivulet, of little breadth, yet violent enough to bring down stones of enormous bulk.

The next morning, when we passed the *Kund* on the side of the hill above it, we were entering on novel ground. The *Bor Gohain's* party had returned previously. I had sufficient curiosity to wish to accompany them, but was unwilling to tire myself and party by an unnecessary expedition.

Such was the nature of our slippery and rugged path, that, although we passed the holy pool about nine o'clock, it was twelve when we arrived at the mouth of the *Mtee* rivulet, one thousand yards beyond it: the next reach was in the direction N. 22° E., but after a debate on our ability to proceed by the dangerous path of the river side, it was resolved that we should avoid it, and cross the hills instead; a little *Míshmí* boy led the way clambering up the face of a perpendicular rock, assisted by a hanging cane, made fast for the convenience of passengers to some tree above: all that I could surmise of our direction was, that we were travelling towards the east, but whether north-east or south-east it was impossible to say, and owing to the sharpness of the ascent, the distance got over was equally uncertain: in the evening, the *Thathutheya* mountain defined the limit of our movement towards the east by the help of a bearing on it, but instead of having a ridge-like form, it was now a high sugar-loafed peak, and the name only enabled me to recognise it. We had crossed one ridge, and to our north, at the base of the hill, could hear the *Brahmaputra* rolling along. The view was limited to the extremities of two sharp bends of the river, the hills, clothed in black forest, rose above us on each side, and *Thathutheya* above overlooked them.* Although we had advanced but a few miles beyond the *Kund*, yet it was nearly dark before we halted, not a bit of level ground, large

* N. B. There is something appropriate in the term chasm or pass, by which Colonel WILFORD distinguishes the *Prabhu Ká'hár*.

enough to spread a blanket, could be found, and with great labor and perseverance my people scraped away a part of the hill's face, where the trunk of a large tree, acting as a support to the ground behind it, favored the operation, and over my bed-place, as the sky looked theatening, I had a few branches placed as a shelter.

A new scene opened on us when we surmounted the next ridge. We gained a much more extensive view, but much of its grandeur was lost on the hill side by the clouds enveloping the mountains, depriving us of a sight of their summits. On our east we were glad to see low green hills, with patches of cultivation, and here and there an assembly of three or four houses: beyond a deep wide dell sunk, of which the bottom was hidden, but on its opposite side a large mountain rose from an extended base and hid its head in the canopy of dense vapours. The chasm of the *Brahmaputra* could be seen extending to the north-east, but its crookedness limited the view and closed it abruptly.

On the side of *Asam*, the bird's-eye view was extremely beautiful. The mountains beyond the *Dihong* were distinctly visible, yet distant as they were, the undefined horizon rose far above their level, intersecting the plain—the silver river here and there exhibited its bright white light, and on the right the bases of the high northern mass were seen one beyond another projecting out into the level surface of the wide plain: hovering between us and the depth below, were white curled clouds in innumerable little patches.

While standing on the ridge, the clouds which had looked threatening began to annoy us with a shower, which soon encreased to a heavy fall of rain; and anxious as we were to move on, or at least obtain good shelter, we were compelled to take refuge in a small field hut, built for the accom-

modation of labourers, who come some distance from their homes to cultivate the more favored spots. The thermometer in the middle of the day, in the plains, had latterly stood at 83° or 84°; at twelve o'clock to-day, it was at 61°, and we found it excessively cold. The effect of a sudden change of temperature to the amount of 20° is felt much more than would be imagined, or has often been noticed by travellers.

The rain continued and confined us to our hut, but we were visited by a party of women who had been out with their long conical baskets on their backs to bring in a store of grain and roots from a distant field, and they promised us assistance from the village in the few trifles we required. In the coldest weather, they are very scantily clothed—a coarse thick petticoat of blue cotton, wove by themselves, is their common dress; it reaches to the knee, and has merely a slit in it to admit the head through. They are excessively dirty, and at all times and seasons have a short pipe in their mouths.

We could perceive one or two large houses at the distance of but half a mile on the face of the next hill, and were informed by our visitors that we might there shelter our whole party as they were empty. The next day, the rain still continued to fall heavily; but we took advantage of a slight intermission to go round the hollow to the opposite side, and were well pleased to make the exchange for a large house well sheltered from the boisterous wind. At intervals of a few feet, the *Mishmís* cut a square hole in their bamboo floors, and form a hearth there of earth, supported by cross beams below. These, to the number of eight or ten, were quickly covered with burning faggots by my shivering people, and the smoke having no exit through the wetted roof, soon became an almost unbearable nuisance. I have remarked that a great number of the *Mishmís* have their brows habitually contracted, from the custom of half shutting

their eyes against the penetrating gas arising from their wood fires. The house we were in had been deserted on account of two or three deaths of members of the *Gam's* family having happened in it.

The *Gam* of *Dilling*, with his daughter, a young damsel, the calf of whose leg would have measured more in circumference than both mine, came to see the white man: though dignified with rank, their appearance was no better than that of commoners. The lady was highly pleased with a string of red glass beads, and not only gave me a fowl in return, but by informing her acquaintance of the beauty of my wares, procured me other offers of barter.

Three days we remained confined to this hovel, and on the fourth, the 25th October, were well pleased at the prospect of a change; heavy masses of white clouds rolled along the dells below and rising up the hills' face, enabled us to see that on the peaks to the north, snow had fallen in considerable quantity. The sun's influence helped to dissipate the mists, and discovered to us our situation. On the west, we had a narrow glimpse of *Asam;* to the north, we saw the *Brahmaputra* deep in its narrow chasm and white with foam—the majestic peak *Thathutheya* closed the view in that direction, and on the east, we were separated only by the deep ravine of the *Disú* rivulet from the large mountain *Thematheya.* Snow gathers on the summits of both these in the colder months, but on *Thematheya* it does not remain long. We descended to the bed of the *Disú,* by a very rugged path, admitting but of slow progress, and traversing the base of *Thematheya,* we approached the *Brahmaputra* in a northerly direction—several water-falls were passed, and amongst them, one of singular beauty, though the stream is small: it first shoots clear over the brink of a high rock, which is nearly perpendicular and quite smooth, and then dividing into mist, almost disappears from sight till caught again near the bottom.

Our path was generally through the jungle, with now and then an intermission of grass in spots which had formerly been cleared for cultivation with vast labour. We came out suddenly on the *Brahmaputra*, and saw it foaming at the foot of the precipice below us, and shortly afterwards we descended to the bed, and halted on a small patch of sand. The rocks in the bed are of such enormous size that it is difficult to believe the river can bring them down, even in the rainy season; but they are evidently not in situ, such a variety of species are found. Syenitic granite—garnet rock, in which the garnets are found seven-tenths of an inch in diameter—serpentine, of a flinty hardness, and primitive limestone, are in larger quantity. The base of *Themathеya*, on our right, is of the same grey carbonate of lime, and perhaps the whole mountain. We had hitherto passed only granite gneis and mica slate.

The river is here but forty to sixty yards wide. I got meridian altitudes of two stars, which gave the latitude 27° 54′ 52, 4″. *Dilling*, the point of departure, is fixed by a bearing on the bend of the river below the *Kund*, and others on *Thama* and *Thathutheyas;* and the observations for latitude, both excellent, limit the distance made in our day's journey, which deviates little in direction from north to south, but a few miles.

The commencement of our march, the following day, was over a singularly difficult place, where the river rushes, with great violence, under the face of a perpendicular cliff. There is no path, and it is a perfect clamber, in which safety would be completely endangered by any other mode of carriage than that adopted, which leaves the hands free. We continued along the left bank of the river, to the mouth of the *Lúng*, where we found Ghalúm, who had parted from us six days before to have a bridge built; and for this mark of attention we were heartily obliged, when we saw stretched between two opposite trees the cane suspension bridge, by which we must otherwise have crossed. The direction of our route was

still north, and we left the river where it bends from the north-west, round the base of a hill we were to ascend—that surmounted, we again enjoyed the sight of our resting-place, which had been visible from *Dilling;* but though GHALÚM's house was now near, in horizontal distance, a most fatiguing part of the journey remained to be performed in descending down the body of the *Oo* river, and ascending the opposite height. It was five o'clock in the evening when, at last, our fatigues of the day ceased. While at GHALÚM's, I had three good observations for latitude, two of northern stars, and one of the sun, which gave 27° 56′ 33,″ 2. Of the direction from *Dilling*, I could now be quiet sure, as I not only had bearings from thence on GHALÚM's house, but could now recognise a low peak very near our halting-place at *Dilling*. Making every allowance for the difficulties of the path, it would appear scarcely credible, without this best of evidence, that we had been employed the entire day in advancing less than two miles. After leaving the *Brahmaputra*, we passed several of the open spots formerly cultivated, and also through some fields belonging to *Tharen*, a village on our left. The scenery was more confined, the view being limited to the hills immediately bordering on the river, which do not rise here to a great height.

We were most heartily welcomed by our rude friends, particularly by old GHALÚM, who seemed delighted with our visit, and we were (or rather I was) surrounded by the inmates of his house, and a few of the neighbours, the whole evening, all anxious to satisfy their innocent curiosity, excited by the odd fashion of my apparel, and the magic art of the invisible musician of my snuff box.

The next day at day light, there was a great bustle without, with much noise, which I found was caused by the pursuit of one of their hill cattle called *Mithun*, which was to be slain for a feast in honor of our arrival. Company began to arrive at an early hour from the neighbouring

villages, and when the feast was ready, we had a very numerous assembly. A large quantity of the meat was minced and mixed with flour of the *Marua*, then made up into cylinders of leaves into which it was pressed and cooked: these were handed about in trays of plaited bamboos, with plenty of *madh*, or fermented liquor, prepared also from the *Marua;* but they presented me with an entire hind leg, to cook after my own fashion, and to the better *Khamtis* of my party, they also presented separate portions. The *Lúri Gohain* alone forbore to eat of it, thinking that it too nearly resembled beef, which not from the maxims of his own religion, but from a wish to cultivate the good opinion of Hindus, he had long discontinued to taste of. I was constantly thronged, and made to exhibit my curiosities, as my gun, pistols and musical snuff box, which last was kept in constant requisition.

The lower classes of the *Míshmís* are as rude looking as can well be imagined. Their ordinary clothing consists of a single strip of cloth, which is as narrow as its purpose possibly permits, and they wear, on occasions of ceremony, the jacket which I have already described as fashioned with so little art—it comes half-way down the thigh, and is made of a straight piece of blue and red striped cloth, doubled in the middle, the two sides sewn together like a sack, leaving space for the exit of the arms at the top, and a slit in the middle, formed in the weaving, admits in like manner the passage of the head. The hair is turned up and tied in a small knot on the crown, and this custom serves to distinguish them from the *Dibong Míshmís*, whom they always designate "crop haired"—a narrow belt of skin over the right shoulder sustains a large heavy knife with its sheath. The knife serves for all purposes of agriculture and domestic economy, it is applied in the same way with the *Singfo Da*, to open a passage through jungle; the other apparatus appertaining to dress, consists of a broader belt, worn across the left shoulder, carrying both before and behind plates of brass, which may be termed back and breast-plates—

they are of four or five inches diameter, and beaten into a carved or spherical form, but they appear to be rather ornamental than useful; a pouch of monkey's skin at the girdle is also suspended to a belt containing tobacco, the small pipe, and the case for flint and tinder, armed on one side with a strong steel. Both this and the pipe are commonly of *Chinese* manufacture, and are frequently engraved with letters. The *Chinese* of *Yunan*, readily interpreted the characters upon one, to signify "made at the shop of" —— "should it prove bad please to bring it back to the maker, who will exchange it." A spear is constantly carried in the hand, the head of which is manufactured by themselves, of soft iron, procured from the *Singfos*, the shaft is of a porous and brittle wood, and it has little resemblance of a weapon fitted for war. Their swords are *Chinese* made, very long and perfectly straight, and of equal breadth, ornamented sometimes with a kind of red hair. They have excellent cross bows.

The Chiefs are seen wrapped in long cloaks of *Thibetan* woollens, or in handsome jackets of the same, generally dyed red or striped with many colours. The head dress is not remarkable: in the fields, it is merely a hemispherically-shaped cap of split cane, and in their homes they prefer to wear a red strip of muslin, encircling the head as a turban: their ear-rings differ according to their wealth; those most esteemed (and when the lobe of the ears has been sufficiently extended) are formed of a cylinder of thin plate silver, tapering in diameter to the center: the latter being often one inch, and the former one inch and a half.

The wives of the Chiefs are habited in petticoats, brought from the plains; they wear a profusion of beads, frequently a dozen strings, and when they are of a sort of white porcelain, their equipment must weigh at least ten pounds; other necklaces are of colorless glass, mixed with oblong pieces of coarse cornelian, and all of *Thibetan* or Chinese manufacture. The ornament for the head is a plate of silver, as thin as

paper, gore-shaped, and long enough to cross over the forehead; one sort of ear-ring had a remarkable appearance: it is a brass-wire ring, three or four inches in diameter, put through the top of the ear, and having suspended to it a triangular plate of silver, which remains in the direction of the shoulders.

Polygamy is allowed—the limit is only the inability or disinclination of the Chief to exchange more hill cattle for new wives. My host, GHALÍM, had then ten, two or three in the house; and the remainder, to avoid domestic quarrels, have separate houses assigned them at some little distance, or live with their relations. As has already appeared, they suffer no sort of restraint, but young and old mix with the men in the performance of every kind of labor, except hunting.

GHALÚM's riches were evident in the embellishments of one wall of the interior of his dwelling; there, on bamboos, extending the whole length, were rows of the blackened skulls of *Mithúns*, *Thibet* cows, and those of the plains, some hogs, and a few bears, deers, and monkeys. The estimation of wealth is to be guided by the number of the skulls of the *Mithúns* and cattle of the *Lamas*, which are of the greatest value. I was, in the course of my journey, in the house of one man who is accused of the shabby trick of retaining on his walls the skulls of his father's time, thereby imposing on all but those of the neighbourhood. I understood that they were generally piled within a little palisade, which marks the spot where the Chief lies buried. Of their religion, I only learned that they sacrifice fowls or pigs to their sylvan deities, whenever illness or misfortune of any kind visits them, and on these occasions a sprig of a plant is placed at the door to inform strangers that the house is under a ban for the time, that it must not be enterred. GHALÚM's house is about one hundred and thirty feet long and eleven wide, raised on posts sufficiently high to give plenty of room below to the hogs.

The morning after the feast, a number of visitors still remained, curious to see what I should produce as presents, and anxious themselves to share, though without pretensions. It had been at first intended that we should depend on KRISONG, the elder brother of the three *Tain* Chiefs, for arrangements in furtheranee of my scheme. He is esteemed as being the more martial and decided character, and his influence in his own tribe, and with the *Mizhus* also, is consequently greater; but he was absent with a party of men, to assist the CHIBONG GAM against an incursion of the *Díbong Míshmís*, at the village of the former, distant two days journey in a northerly direction. Had this man been present, and had he entered into our views, success would have been more probable, from the operation of fear with the *Mizhús*.

In his absence, it only remained to engage the services of his brothers, GHALÚM and KHOSHA. I presented them with jackets of scarlet broad cloth, large silver ear-rings, and red handkerchiefs, with a few other trifles, and did not omit to send to KRÍSONG's house a similar present, though of less value. Immediately after the distribution, I observed a number of the visitors quit the house with a rather discontented air. Those who had received gifts were long busy in admiring them, and while discussing their merits, I perceived great deference was paid to the judgment of RUDING, a Chief of the *Mizhú* tribe, whose intercourse with the *Lamas* is frequent, and who laid down the law on this occasion with all the dignity and authority becoming so experienced and enlightened a traveller.

The *Míshmís* differ with the other hill tribes in their habit of trafficking—every man among them is a petty merchant. They did not seem to comprehend why I should be unwilling to part with any of my stores for an equivalent, and I was amused at their exhibition of cunning in attempting to draw me into making a bargain.

In the mean time, a good deal of discussion had taken place between the *Lúrí Gohain* and *Míshmí* Chiefs about our journey, in which RÓDING had joined, and he soon became very anxious to have the sole merit of guiding me, laying great stress on his rank amongst the *Mizhú* tribe, and his great influence with the *Lamas*. I had observed him pretty closely, and felt inclined to hold no very favorable opinion of him. His house is so far removed from the side of *Asam* that he would not have much to apprehend from our anger, and the only hold upon him resulted from his connexion with the *Taïns*, by marriage with a daughter of KHOSHA. But he was very urgent in representing that the presence of any of the *Taïns* with me would not be at all advantageous.

GHALÓM was very willing to set out with me, but was unluckily lame from some slight hurt; and KHOSHA was engaged in the momentous occupation of building a new house, and would not, on any account, desist from his personal superintendance.

My detention here for four days had caused an awkward diminution of my stock of provisions, and this was an additional reason to move onward, more especially as GHALÓM had not the means of supplying me: it was therefore resolved to remove to KHOSHA'S, whose fields had yielded him a more plentiful crop. On the 31st October, we set out and retraced our steps down the descent to the *Zú*, and up the opposite ridge, from thence we turned to the east, and passed the summit of a hill, and then moved through ultimate cultivation and grass jungle on the face of the hill, in an easterly direction, to KHOSHA'S, and found it an easy march. The direction of our route was afterwards more accurately ascertained by ascending a neighbouring hill, whence GHALÓM'S was plainly distinguished, and also the two mountains, to one of which, *Themathеya*, we had now approached very closely; again two altitudes were observed here for latitude. A view in another direction was now opened to us, but was

not extensive enough to be very interesting; we overlooked the *Lúrí* river in its south-easterly bend behind *Thamatheya*, and in the same direction could perceive a little snow laying on the peaks north of the *Dihing*.

As we seemed now, though contrary to my wish, to remain dependant upon RÓDING, I had a conference with him, and admonished him of the degree of responsibility in the office he was about to undertake; on the other hand, I warned the *Taïns* also against assuring me too lightly of their belief of RÓDING's good faith. The next day KHOSHA made good his promise in a manner more handsome than I expected, and, for a few seers of salt, procured me six days' provisions, with which I instantly set forward, with KHOSHA and his son in company; the latter was to proceed with us. Our march was in an easterly direction, on the southern face of some high hills; first through some cultivation, and then down a very steep descent through tree jungle, to the dell of the *Indal* rivulet. The ascent, on the opposite bank, was very steep and difficult, and after nearly three hours fatiguing march, we were still in sight of KHOSHA's house, bearings on which with *Thamatheya* give the distance and direction of the day's journey. We halted with a Chief named NAEBRA, who, according to the custom of these hospitable people, killed us a hog. I gave him in return a pair of large silver ear-rings. His house is a ruinous hovel, and his consequence can be but small; but he was very officious in offering his services for my journey, and asserted that he and RÓDING could ensure me against all difficulties with the *Mizhu* tribe. The rock appeared to be the same white talc slate, and lower down in the hollow, mica slate.

In the morning KHOSHA returned, and took his son with him, promising, however, to follow me to RÓDING's, should GHALÚM remain unable to proceed. He went early, without informing me of his intentions. Thus defeated in my purpose of having the security of the presence of a Chief

of his tribe, I agreed with the *Gohain*, that further delay was to be preferred, if we could contrive some more certain arrangement.

I left our provisions under the care of a few men, and returned to KHOSHA's, who now seemed really concerned, and promised that if GHALÚM's lameness should continue to disable him, he would himself go with us in his place. We found that GHALÚM had actually set out, and had proceeded to join us by way of the *Lúrí*. There now appeared a prospect of starting in earnest, and on the 4th I was delighted to advance in the field of discovery. The party was divided, first returning by RÚDING's, to bring on the things left there, and the other with me proceeding by a much better path down to the *Lúrí's* banks, where we awaited the arrival of the others. It was now evident that our going to NAEBRA's had been contrived only to give him an opportunity of begging, under the pretext of presenting his hog.

On the banks of the *Lúrí*, we marched at a good pace through bamboo jungle on a narrow level strip of ground. The *Míshmís* informed us that, advantageous as the level was for rice cultivation, they were obliged to relinquish it from suffering in health in the low grounds. We halted in the bed of the *Lúrí* on a stone bed, and posted the sentries as if an attack had been expected. The next day we continued to advance up the *Lúrí*, sometimes over the large boulders on its banks, and sometimes through fields and grass jungle, a little elevated above the river on the hill's side. From the mouth of the *Thamè*, where it joins the *Lúrí* from the north, we commenced the ascent of a hill by a very difficult path almost blocked up with tree jungle, we afterward passed through several fields, and observed that the crests of the hills opposite were spotted with cultivation. We halted at the house of a *Mizhú* Chief named MOSHA, who, a few months before, had led an expedition to plunder the *Lúrí Gohain's* village, but he failed in his attempt, the accidental firing of a gun in the

course of the evening giving rise to the supposition that an alarm had been given. The party had been lying in wait for the approach of night, and their cowardice is apparent from the circumstance of their actually leaving on the ground some of their weapons, when first struck with the idea that the village was alarmed, they commenced a hasty flight. Their use of poisoned arrows is in character with their treacherous and dastardly mode of warfare.

The boulders in the *Lúrí* are generally of sienitic granite—on the ascent of the mountain we found gneiss passing to mica slate.

MOSHA, as usual, killed a hog, and was rewarded in return with a suitable present: he expressed his readiness to accompany me if I were pleased, and of course he was invited, as I considered it advantageous to throw some responsibility on a *Mizhu*, residing near the *Taïns*. The great length of his house, and the number of skulls ornamenting it, bespeak him a rich man.

We were joined, very much to my satisfaction, by GHALÚM and my *Burman*, who had been lame and obliged to halt, by marching over so much rock.

We started early the next morning, understanding that we had a most laborious march before us to the next place, where water could be found—our course was still east, but we had left the *Lúrí*, which is from the south-eastern mountains. The ascent of the next mountain we found very difficult and fatiguing for some hours, very steep through, having forest; latterly, it was more in steppes where a sudden ascent is followed by a long gentle slope or nearly even ridge; at the summit of our high ridge, I got a very good observation of the sun's meridian altitude, and once or twice in the way up, we enjoyed partial views of the tract behind us.

Our approach to the summit was marked by greater steepness and difficulty, and at last by the absence of all larger trees, which gave place to those of very stunted growth or to low bushes, indicating by their appearance, what was asserted by our guides, that snow remains here. It may be supposed what interest was excited as each new gain on the mountain's steep face brought me nearer to that height whence I expected to overlook the unknown regions through which the *Brahmaputra* has its hidden course, but I suffered disappointment. Another mountain rose close to this one on its east, and where the capricious clouds permitted, through their casual openings, a passing glimpse of the rugged country beyond, all I could perceive was fir-clad mountain or a patch of snow. To the south-east the *Lúrí* was again perceived, and the snowy peaks were partially visible, where it has its source—it was evident that the extreme of that valley or glen was not far distant. To the north this peak is connected with others of greater altitude, and I was sorry to find that heavy clouds, in that direction, completely obstructed the view.

We had been refreshed, while halting on the top, with numerous berries of a peculiar kind, growing in luxurious branches like currants. They are without stones and juicy: when unripe, they are of a pure or greenish white, and when ripened, of a beautiful azure blue. We had not descended very far before we found water trickling down the rock, our path then led along the little rill, which, having frequent contributions in its progress towards the base, had become, near our halting place, a considerable stream. It was a wild spot, a complete chasm between two high mountains, where we built our little huts for the night, of such poor materials as the more leafy branches of fir trees.

We resumed our descent early the next day, and continued on the left bank of the glen, first winding to the east, and gradually more to the north, in the worst of paths; the only support to which is often the root of

some large tree, and in some places this even cannot be found, but the passage in front of some projecting rock is aided by trees bound together with cane, and their extremities either buried in the soil or fastened to the trunks of other trees.

About one o'clock we found the chasm widening, and soon after we came upon fields. The entire mountain crossed is of granite, in which the mica is not abundant. At the field I found that a green stone and sienite had taken the place of the former granite, and saw several masses of pure hornblend rock. From the fields we descended to the *So*, the source of which we had seen in the trickling water near the summit of the mountain—it was now a large rivulet, and no longer fordable. We next climbed up a very steep rock, which could not be surmounted but by the help of the canes which are left tied there, and about three o'clock we once more found ourselves near the *Brahmaputra*, and we overlooked its course from the east to the distance of ten or twelve miles.

The scene has now an entirely new character: the river washes the bases of the mountains, which on both banks rise so high as to have their tops clothed in snow: they are very steep, but near their bottoms the declivity is easy, and has the appearance, when viewed from a height, of an undulating plain. This, the *Brahmaputra* intersects, running at the bottom of a deep channel or chasm, which has much the appearance of having been gradually deepened by the action of the water. The outline of the hills is varied and beautiful, and they have no longer the inhospitable look given by the uniform black jungles on those left behind, but are covered with alternate patches of grass and forest, with extensive intermixture of cultivated fields reaching to near their summits. A longer mountain immediately over the river appears to be of granite—on this bank the great number of large black blocks of hornblend rock and greenstone indicate that these constitute the strata.

In its onward course the river stretches to the N. W. between steep mountains, and is soon lost to the view. On our march, we had occasionally perceived through the clouds very heavy snow lying on the peaks to the north, one of which I conjectured, from its shape, to be the turret peak of *Sadiya*. Descending from the rock we reached extensive fields belonging to RÚDING's village, and travelling some distance through them, with the river two or three hundred yards off, on our right, we passed several houses built singly, but all ornamented with a small grove of plaintain trees, and about four o'clock we, at last, arrived at RÚDING's.

Much of this man's asperity of manner wore off, now that we had become his guests, and he was active in doing whatever he could for our comfort: a pig was killed as a matter of course. We found waiting our arrival, my old acquaintance PRIMSONG, who had supplied us with the earliest intelligence relative to the route to the Lama's territory.

Next day, when I talked of moving on without loss of time, difficulties were started, and the *Mishmís* declared that we must not think of proceeding till proper notice should have been given to the Chiefs of the next village, particularly to one DINGSHA, whom they regarded as the person of greatest influence on our route—for this purpose they proposed that PRIMSONG and GHALÚM's nephew should advance, and receive their report on the road.

I remarked that our arrival here did not cause the like commotion and assemblage of people, that it did at GHALÚM's. We made our purchases of rice at a dear rate, and were materially assisted in this by the *Lúrí Gohain* and other *Khamti* Chiefs, who are all skilful workmen in silver, and who readily employed themselves in fashioning ear-rings at RÚDING's forge, for the purpose of barter—the workmanship giving a double value to the silver. A couple of hammers and a few punches are all the tools requisite, which they carry with them in their travelling bag. The silver

is melted and poured out in the hollow of a bit of bamboo, then beaten, with great patience and perseverance, and repeated heating, into plates almost as thin as paper: by management of the hammer, they make it spread in the required direction till long enough to bend into a cylinder, the edges are then cut even with a sort of scissors, and the parts to be soldered are notched in a castellated form, the alternate projections inserted, and a little borax, with a very thin bit of plate laid over the joint, which the application of a little heat readily unites; a curve is then given to the sides of the cylinder, when the top is only required to finish it. The top is, of course, a circle, and when beat thin enough it is laid on a bed of lac softened by heat, and with blunt punches, an embossed pattern is then given, both the silver and the lac being repeatedly heated, to prevent the former from becoming brittle, and to soften the latter sufficiently to cause it to assume readily the indentations of the punch: in this way, with the aid of sharper punches, and some of small size, a very pretty pattern is given, but it is not pierced. All the *Mishmís* Chiefs have a forge, at which they make their own spear heads, and mend the implements used in tilling.

I was very anxious to proceed the next morning, butwas foiled again by the lazy *Mishmís;* they wished to wait for the return of our emissaries, or at least to allow them one whole day for a parley with the Chiefs: with rice to eat and a house to sleep in, they could not conceive that any motive need occasion haste.

In the course of the day we learned that we are threatened by one Chief, who declares that if we come near his passes, he will roll down stones on us. I begged that he might be invited to see me, but they seemed too certain of his hostility to make the attempt.

Rúding began to talk of his present, and to hint that when he undertook to conduct us, he expected to be well paid, and he wished to know

what I would offer him. I doubted his power to give any material assistance; and wished to bargain with him conditionally on his success, but of this he would not hear, and in return proposed to give back my present if unsuccessful, but in the meantime he must receive in pledge whatever he was to have, and I found that his demands would nearly exhaust my store. The obvious inference to be drawn from his uncompromising and unreasonable demands was, that conscious of his inability, he was endeavouring to rob me of all he could, and I was very little inclined to yield. However, early the next morning, I selected a larger present than I had yet given to any Chief, and exhibiting it to him, desired that he would decide at once whether or not to receive it, and give us the benefit of his services. I reminded him, that if I should fail in attempting to go without him, and return in consequence, he would not benefit at all by my visit. But he had a stronger hold upon me than I then imagined. It alarmed the *Täins* and all the *Míshmís* of my party, who were very unwilling to move without the security of his safe guidance.

On his declining to receive my present, I ordered a march and started, intending to see the Chiefs to whom my messengers had been sent, when I should know better with whom it was necessary to treat; but we had not proceeded a mile when GHALÚM informed me; that he and his friends could not go on without a better understanding with the *Mizhus*, or the presence of RÚDING; they, in fact, seemed very much alarmed. GHALÚM, at his own request, sent back to offer the coat given to him in addition to my present, and after keeping us a considerable time waiting, RÚDING at last rejoined us, and consented to follow us on the morrow, upon the conditions offered.

We crossed the *So* by a rude wooden bridge, and traversed the hill's face a few hundred feet above the *Brahmaputra*, by a very bad path. The direction of the march was towards the south-east, the irregularities were

only in the unevenness and rockiness of the path: the deviations from a right line were not considerable, neither the ascents or descents, and we made good way over the ground. Several cane suspension bridges were passed, and we had an opportunity, for the first time to-day, of seeing the passage made by one of them where we sat to rest, while several men passed to and fro. Accustomed as these men are from their infancy to this mode of crossing rivers, and confident as they must be of the stability of their safety, I observed that each man took every possible precaution before submitting himself to the awful situation of "dangling midway between heaven and earth," suspended on three light canes high above a rapid river eighty yards broad.

A stage is erected at a considerable height above the water on either bank, and well secured with large stones and canes made fast to the neighbouring trees, the three canes composing the suspending rope pass over well secured supports on the stages at either end, and are separately fastened to trees, so that were one of them to prove not trustworthy, two still remain. Before the stages, a number of loops hang ready for use—they are made of a long cane coiled like a roll of wire. The passenger inserts his hands and shoulders through two or three of these and brings them under the small of his back; he then, or some one for him, secures the loop with great care to a kumurbund contrived for the purpose on the instant, and generally the spear put through the knot helps the security of the fastening, then throwing his heels over the cane, he launches forth on his adventurous passage. The weight of the body altering the natural curve which so large a cane must necessarily have, however well stretched, causes him to descend at first with some rapidity, in which the hands are rather used to arrest the progress; towards the middle he is master of his pace, and when hanging there the cane is considerably bent from the horizontal line; now the hands are used to drag the body gradually up the inclined rope; progress grows slower as he advances, and when near the goal he appears so

fatigued, that between each tug he makes a long pause; accidents are seldom known, and I understand that they take care to renew the canes at least every three years.

Latterly, we descended to the edge of the river, and passed along its enormous boulders, rather by leaps than steps. The great mountain from opposite RÓDING's, still continued with us, on the opposite banks; but from our halting place it receded where the *Halí* river separates it from a new succession of hills of a different character, and the part of the great mountain we saw was completely clothed, towards the top, in firs. The green grass-covered hills now succeeding, have many firs growing singly even near the level of the water, and they are striped sometimes, from the summit to the base, with fir forest. On the rather wide stony sand bed where we halted, we found drafted pines, and enjoyed the fine odour of the fresh turpentine. The river, for one or two hundred yards above the *Halí*, is so calm, that I was induced to bathe in it, and the consequence was, that my teeth chattered for two hours, in spite of the bright blazing fires of our fine pine faggots. The rock was almost inclined enough forward from the perpendicular, to save the necessity of building, and our huts were, consequently, very soon erected. In the evening, immediately after cooking, all the *Khamtis* were most busily employed in piling up conical heaps of sand for altars, round each of which a little trench was made. The *Lúri Gohain* acting as high priest, advanced before the highest, and muttered a long prayer for our success on the journey, and concluded by placing a bunch of flowers in the apex of the cone, and strewing the trench with offerings from his ready-cooked meal. There was not the appearance of a village on either side of us. We seemed to be quite solitary, but during the evening several labourers passed us, who told us their houses were near on the cliffs above. All the rock on our route was hornblend and greenstone.

The direction the next day was still the same, or a little more south, and we passed over more level ground: several open spots were met with, which admitted of our travelling at a brisk pace. At the deepest part of this bend, to the south, we came on the steep mountain's face again, and here the path was bad in the extreme. About one o'clock we left the *Brahmaputra* to proceed in an easterly direction over the hills, round which the river winds. They were here rather low and spreading out into a more even yet undulating surface; the extent of the open tract was from eight hundred yards to near a mile, and a great part of it was cultivated: in several directions houses were seen, some of them close to our path. As we advanced over this new ground, an evident improvement was observed, the houses were built on more commodious spots, each had its grove of plaintains. *Mithuns* and chowr-tailed cows were grazing in numbers, and the men who appeared lazily standing near our path to view the strangers, were wrapped in long warm cloaks with sleeves: there were even rude walls, built of stones without cement, to keep the cattle out. At one house, GHALÚM was recognized and invited in: he promised to hear the news and not detain us a minute, but his favorite *Madh* being offered him, he was easily detained, and repeatedly I sent in vain to remind him that we were waiting his leisure in the rain. I wished to enter the house, but was given to understand that I should be a most unwelcome visitor. Presently we met PRIMSONG and our messengers, who begged, in JINGSHA's name, that we would halt for the night where we were, or in a spot to be pointed out, and that arrangements would be made for our better reception on the morrow, he being unable to invite us to his house on account of a sacrifice having been offered for his sick brother. We were accordingly led to the hill's side near the village of one GÚNSHONG, who appeared and stared at us, with many more Chiefs, but none of them appeared at all inclined to shew the ordinary hospitality, but rather they looked at and examined us to keep aloof from further intercourse. The spot pointed out for our halting-place was closely surrounded with jungle,

and little to my liking, as a surprise, if any mischief were intended us, could scarcely have been guarded against. I found it necessary however to halt here, as the people would not show us another place.

I ordered the people next morning to prepare for marching, and when ready, I was informed that JINGSHA would not be ready to receive us till the morrow, and that he particularly requested we would remain that day also where we were. I sent to say that I intended to move nearer to him, and intimated my wish, that if he had not yet finished the house which was said to be building for us, he would order a place to be pointed out where we might halt, in the vicinity of his dwelling. We set out and crossed the deep ravine of the *Danh* rivulet, and passed more of the open ground already described, but were soon met by JINGSHA's people, who came in haste to warn us not to approach nearer to the house, and shortly after we encountered other messengers, who told us authoritatively to halt at once, or to return. I selected a convenient open spot on the top of a round hill where the jungle was twenty to thirty yards distant on every side, and there, in accordance with their wishes, caused our huts to be built. We were now told that the Chiefs of the next village could not consent to our advancing till some of the influential men of the neighbourhood should be assembled, to debate on so momentous an affair as admitting strangers to pass through their country, but they hoped that all would concur in a favorable opinion. This appeared reasonable, and though very anxious to proceed, I thought it better to allow time for a meeting of all the principal men, when I could meet them, and clearly understand with whom I had to treat. Amongst other arrivals at the village, that of LAMAT THAO was announced from a distance of two days journey, in a south-easterly direction. This Chief is in the habit of trading with the *Khamti* country on the *Irawadi*, and being perfectly acquainted with the *Sham* or *Khamti* language, I hoped much from the advantage of communicating so readily with him through the LURI GOHAIN; but as my people were afraid to go across to

the village, I had no means of sending to him, but through RÚDING, whose interested motives perhaps prevented him from delivering my message: however this was, I only got for answer that LAMAT THAO would not come. The *Khamtis* shuddered at the idea of his being so near us, for some years ago, he treacherously murdered several families who attempted to cross the mountains to visit the *Lama* country. It is said that he received the travellers into his house with demonstrations of hospitality and friendship, and supplied them with intoxicating liquor, so that they fell at night an easy prey to his band of remorseless assassims. When I heard this tale, I expressed my wonder that his visits should be still tolerated by the *Khamtis*, and that they had not retaliated; but was informed that a present of the whole of the muskets of the murdered party had restored him to favor with the *Khamti* Rajah.

At twelve o'clock, I got a good observation of the sun, which gave the latitude 27° 53′ 00″; this large difference from RÚDING's, with the facility of taking bearings along the open river, now afforded the means of proving my scale of rates of progress, without which proof I should have been very ill satisfied with my data for a map.

Opposite, on the hill on the north bank, is the village of *Samleh*, the eighth stage on PRIMSONG's route given me in march. Snow was seen on several peaks a little removed from the river to our north. On the south, the tops of the nearest mountains were all partially covered with snow, forming a strong contrast with the black fir forests on them. In the south-east, was the hollow of the *La Thi*, and nearly east, the wide opening of the *Ghalúm Thi*, between which two rivers the mountains rose high enough to have their more remote peaks capped with snow. North of the *Ghalúm*, successive snowy peaks were seen stretching away to the east, and forming a high ridge. The view was not very extensive in any direction. We were then in the deepest part of the bend

of the river. To the south, about four miles from us, just before it receives the above named rivers, it winds round the base of *Samleh* hill. I made PRIMSONG and others point out the direction of its course from the Lama country, and was informed by them that it runs from north-east to south-west without any material bend, and that the course of the *Talúka*, through the Lama country, is in the same direction. We could see that the gap to the north-east extends uninterruptedly a considerable distance. The mountains are covered with grass, and have on them large patches of fir forest, extending sometimes in ravines from summit to base.

The day passed away without our seeing any thing of the Chiefs, and we had not the usual concourse of curious visitors: my people also seeking trifles at some houses at no great distance, found them empty, as if the inhabitants were under alarm. This strange behaviour of the *Míshmís*, so different to what I have hitherto experienced, convinced me that a hostile feeling existed; but I still fully expected to see the Chiefs, who were said to be assembled and assembling, and I did not doubt my ability to talk them into perfect good humour. The next morning, however, seeing that another day was wearing away without bringing any signs of their approach, I dispatched PRIMSONG to them, to request that they would pay me a visit, and understand from myself what my purpose was. I instructed him to inform them, that I had no wish to pass through their country without their concurrence, but I particularly begged that they would come and confer openly with me on the subject, and freely state their objections if they had any. PRIMSONG returned in great alarm at the rough reception he had met with: though personally known to, and on previous good terms with them all, they threatened him as the cause of our introduction. He reported, that there were about two hundred men assembled at JINGSHA's, all furnished with arms, and holding a stormy debate, and he feared that the question was already decided against us. Neither he nor any other of the party

would venture again, and it appeared necessary that I should make the attempt myself; however, the difficulty of the want of an interpreter, and the admonition of my friends as to the risk I should run, deterred me. I have since regretted that I did not go amongst them, either alone or with my whole party, as I think I might have been successful. RÓDING was often to and fro; he told us that a great number were hostile to us, but that he could, and would do every thing if he received his present. In the evening he came again, making a loud clamour, like a vexed school boy, for his present. My present! he said, in reply to all questions. My *Mishmis* were anxious that I should give it to him, convinced by his assertions that he had the power yet to produce a revolution in our favor. I, at last, consented to put the present, precisely the same as had been selected for him in the morning, into their hands to give conditionally, that if he were not successful he should return it. RÓDING was now highly delighted and moved off, informing me that all would be right immediately; but he took care previously to come over and examine each article of my gifts: when parting, he called his brother-in-law aside (KHOSHASSON) and told him he would act wisely in returning to his home without delay. NAEBRA and MOSHA, the two *Mizhu Chiefs* resident near the *Tain* villages, who had received my presents, seized an opportunity of passing through our camp, and told us that they had not been admitted to the council, because they were not thought trustworthy, but that they strongly suspected, from what they had observed, that treachery was intended, and they advised us strongly neither to accept a proffered invitation, nor venture to sleep that night—this much they hastily told us, and then hurried away. RÓDING returned immediately with an invitation to JINGSHA: he proclaimed that all was well, a hog had been slain for us, and we were to take up our quarters in the house that night, and in the morning proceed to houses. I excused myself from moving at that late hour, and RÓDING did not press the invitation. He again called his brother-in-law to the edge of the jungle, and threw out some dark hints. He wound up,

however, with telling him, that it would be madness in him to remain there after his warnings. GHALÚM, and the rest, were now so decidedly alarmed, that they insisted on immediate flight; but I should mention that they had observed many suspicious circumstances which have not been stated. I considered that I ought to be guided by the intimate knowledge which they must necessarily have of the habits of their neighbours, and as they were convinced of the inutility of our remaining, unless we were prepared to proceed in hostile form, I consented to take advantage of the night for a retrograde movement. I proposed to start after midnight, when the moon would serve to guide us over the good ground to the banks of the river, when we should have daylight for the difficult path over the rocks. The people all cooked, in order that they might not be delayed in their flight on the morrow.

I lay down to rest early after posting my sentries, but I was not permitted to enjoy quiet long, the fears of GHALÚM and the other *Mishmís* being so great, that they earnestly begged I would not delay our flight. At half-past ten the party was arranged in marching order, and enjoined to be very careful in avoiding noise when passing the house which lay close to our path. The *Chinese* prepared, in admirable style, a train of wood to go on burning through the night in the midst of our encamping ground, and then, after seeing the guides and coolees take the lead, I bid adieu, with a heavy heart, to the opening mountain scenery which, three days before, I had hailed as the road to new and most interesting discovery. I found that my people, though generally so awkward, needed no hints in managing a retreat: we passed all the houses unobserved and without noise, excepting that which could not possibly be subdued arising from the heavy tread of so many men. We arrived at the rocks on the *Brahmaputra*, with no other accident than the fall of a poor coolie, who missed his hold while clambering down the perpendicular precipice of a ravine, whose hands and feet were required with careful use of both. He

fell full ten feet, but he alighted on some bushes, and escaped unhurt. On the bad path we found the want of full light, and indeed, after proceeding some time with imminent hazard of broken legs, and finding little progress could be made, (the moon was hidden from us by the hill above) we threw ourselves on the ground and were all quite enough fatigued to enjoy sound sleep. At day-light we resumed our retreat, and at an early hour arrived at our former halting place opposite the *Hali:* here the men rested to eat their ready-cooked meal.

About twelve o'clock there was an alarm from the rear, of a pursuit, and the musketeers were assembled together. On our arrival at one of the difficult precipices, the alarm was seconded by the appearance of large heaps of stones, ready at the top, for rolling down on unfortunate assailants, but it was agreed at the time that the heaps had been recently made. I believe that they had been prepared long before our coming. When we came out on an open spot in the fields, I called a halt, that we might know what sort of enemy we had to deal with, for they must inevitably come up with us sooner or later, and there came one solitary man. He was RÚDING's son: the information he gave us was, that an hour or two before day-light in the morning, the assembled warriors had invested our position, and concealing themselves in the jungle while advancing from all sides, they at last rushed upon our huts, and to their infinite disappointment, found them empty. I do not vouch for the truth of this story, nor even my belief in it, for I found that RÚDING's game was now to demand a reward for his interference to preserve our party from utter destruction. We could not collect more on the subject, than that it had been the intention to attempt a surprise by night, if we had accepted JINGSHA's invitation to his house, or had that failed, to wait the opportunity of the division of our party, at the crossing place of the great river. We heard also, that the multitude were inclined to retaliate on RÚDING when enraged at the discovery of our departure, and we now found that even

before our arrival at RÚDING's, these hostile preparations were making; and that this was the reason of our finding his village so thinly inhabited. We took possession of his house for the night.

Principally to avoid the tedious ascent of the great mountain, crossed in marching from KHOSHA's, we adhered, on our return, to the banks of the river, and the remaining part of my journey was only interesting as it discovered the intermediate line of direction of the river to *Thathoutheya* mountain, and to the *Kund*.

I was very anxious to retrace my steps up the *Brahmaputra*, with a sufficient force, to overawe the *Mizhus* from attempting any similar treachery to that they had prepared for us. I proposed to take twenty musketeers, and then, with the acquisition of Lieutenant BURLTON to our party, I did not anticipate any further shew of opposition.

Though reasoning on the advantage of doing that which has been left undone, may be something foreign to the purpose of this memoir, I think it due to myself to mention the objections and difficulties which have prevented my labors coming to a successful termination, as an answer, a priori, to those who might suppose the facilities of pursuing this investigation greater than they really were or are.

Captain NEUFVILLE, whom I found returned to *Sadiya*, in a political capacity, had brought up with him, by Mr. SCOTT's direction, a large party of the *Míshmís*, with their Chief, whose emigration from the mouth of the *Dihong* and from *Silání Mor*, had caused such great dissatisfaction to the *Abors*. It was proposed to endeavour to re-settle these men at their old haunts, which measure the *Abors* had assured us would produce a complete revolution in their feeling towards us. The *Míshmís* were, of course, to be protected against any retaliatory practices of the *Abors*.

My opinion was, that merely to shew the *Mishmís*, and to promise to the *Abors* that they should stay, would not satisfy these shrewd people, who would have required some better proof of the intention of the former to remain. I had completed preparations for my return towards the sources of the *Brahmaputra*, and it was with great regret* that I deferred the completion of my plans in that quarter, but I yielded partly to the opinion of Captain NEUFVILLE, the Political Agent, and what also greatly influenced me in my determination to attempt again to advance from the *Dihong* side, was the belief that as the *Abors* were aware of the presence of the *Mishmís* at *Sadiya*, they might now be better inclined towards us, and that at least so good an opportunity might not occur again for some years. I was to be assisted also by having to present to the *Abors* a similar present to what, it is said, was occasionally given by the *Asamese* Government in former times. Another reason for a greater probability of success now than before was, that I had received an invitation from the *Abors* of *Membú*, to pay them a visit. During the rains I had dispatched to them my active Agent, the LÚRÍ GOHAIN, to talk on the subject of their conduct towards Captain BEDFORD and myself, and to explain our motives for so anxiously renewing enquiries respecting the course of their river, in a favorable light: they, in reply, sent me a round stone as an emblem of the stability of their friendly inclination towards me: "until," they said, "that stone crumbles into dust, shall our friendship last, and firm as its texture, so firm is our present resolution."

Having had some experience, however, of their uncouth manners, and of their susceptibility of being suddenly influenced by the strange harangues of their native orators, I requested to have with me a small party

* I have regretted it ever since, as of all my plans it appeared the best calculated to ensure success: certain knowledge would at least have been obtained from the *Lamas*, whether the *Sampo* continues beyond the source of the *Brahmaputra*.

of regular troops ,who might keep the villagers in some awe, while guarding our boats and effects at the *Ghat;* I had also fifteen musketeers of the *Khamtis,* to accompany us if we should be able to advance.

We arrived (Lieutenant BURLTON was now with me) at *Singarú Ghat,* without any remarkable occurrence on the way, and immediately sent AGAKONG (a *Mishmí* Chief, resident on the *Dihong)* to the *Membú* village, to show the before-mentioned stone, and remind them of their invitation. He brought back one of the two influential men of the place, with information that we were expected at the village, and that they should be happy to see us. In the mean time, people had been with us from *Padú* village, to express the wishes of the *Gam* and commonalty of that place, that we would remain on the sand-bank where we were, and there receive their visits, and hold a grand conference, which the *Abors* seemed to understand as the only reasonable purpose of our coming, or, at any rate, as the only admissable mode of communicating our intentions.

We held to our first resolution, but before we could set out the next day, more messengers arrived from *Membú* to inform us, that they were aware of the endeavour made by the *Padú* people to detain us, and begging that we would pay no attention to them. This manœuvring exhibits the difficulty of treating with people who do not acknowledge one common head; but, on the contrary, are all jealous of one another, and united only in cases of general application to the common welfare.

We started, and marched two hours through a dense tree jungle by a path admitting, as usual, but one man at a time: we then came out upon a fine patch of cultivation, extending four or five miles, and passing through a part of it, we entered a path eight or ten feet wide, and perfectly even, which continues in a direction nearly north to the *Shikú.*

Near this rivulet, we found a slight rise in the ground which terminated on the river's bank in a perpendicular conglomerate. We were quite astonished at the skill and labor shown in the construction of the cane and suspension bridge thrown over at this point; it was such, as would do no discredit to the department for similar works in Calcutta. Groups of trees, at either end, are so conveniently situated for making fast the canes, that the idea occurs of their having been planted for the purpose—the canes are passed over pegs in the supporting posts, and separately stretched and fastened to the different trees. There are two good main suspenders, and on these hang elliptical coils of cane at intervals of a few yards, supporting at the bottoms of them the footway, which is not more than twelve or fourteen inches wide: the elliptics are further connected by canes, running along the sides, protecting the passenger from the fear of falling; but, though considerable stability is thus given to the whole structure by connecting its several parts, there is still a very unpleasant swinging and waving during the passage. The span between the points of suspension is full one hundred and twenty feet.

The road from the bridge to *Membú* village ascends a low hill, and is stony. In one place, where the natural form of the rock with some artificial defences narrow the path, we found a door-way recently built of green boughs, intended, as we understood, to keep out those evil spirits who might chance to travel in our company.

On both banks of the *Shikú* are cliffs of conglomerate, the faces fresh from recent slips, caused, perhaps, by the undermining of the river in the rains (as the quantity of rubbish at the base is trifling.) The peaks of this conglomerate ridge are remarkable for their sharpness. Approaching the village, we first passed a great number of granaries, built apart for security against fire. The village may consist of one hundred houses, built near each other in the midst of a stony slope of easy

ascent. In the middle is the "*Morang*," a large building which serves as a hall of audience and debate, as a place of reception for strangers, and as a house for the bachelors of the village generally, who, by their laws, are not entitled to the aid of the community for the construction of a separate dwelling. It was intended that we should lodge here, but the effect upon our olfactory nerves of certain appendages of convenience, was so appalling, that we made good a very hasty retreat from it, and we had luckily received hints from the LÚRI GOHAIN on this subject, which had induced us to bring our small tent.

The houses are not of that great length which I have described as a peculiarity in those of the *Mishmí* country. The first evening there was no great crowd, and we observed the women and the people returning at a late hour from their occupation in the fields, but there were enough present to give us no little annoyance from their unceremonious manners of satisfying their curiosity, which, however, we endured patiently. One fellow sat down suddenly and proceeded to pluck off my shoe, the stocking excited his astonishment, but finding it not so easy to get that off, he satisfied himself by touch that it was absolutely the fact, and then proclaimed to the wondering crowd that I had positively five toes shut up in the narrow space of my shoe. At night, we were surrounded and much plagued by men, women and children, whom we only got rid of by promising them that, the next day, they should indulge their curiosity to the full; indeed the next day appeared, when it came,* to be an allotted holiday for this special purpose, and our situation was worse than that of unfortunate wild beasts at a fair, in as much as that we had not the advantage of cages and bars to keep our annoyers at arm's length; our people were all suffering and complaining, for they could not command that slight portion of respect which was

* The village boys, at the first dawn of day, are made to go the round of the place, warning sleepy folks, that it is time for labors to commence.

paid to us, and but for their extreme good nature and forbearance, blows must have ensued from the impertinence of these uncivilized vagabonds. Though I had nothing to communicate, and did not expect to be much edified by what I should hear, I acceded to their request, and went into the "*Morang*," where the Chiefs had assembled, together with those of *Silúk* also, (a neighbouring village). They seem wonderfully fond of holding these palavers, at which their orators are heard with the utmost patience, and with the most decorous avoidance of interference. Three or four pronounced very loud and vehement orations, pressing for the return of the *Sadiya Mishmis*, whom they were assured we retained for the sake of profiting in revenue. I could only return general answers, and refer them to Captain NEUFVILLE, the Political Agent. On other subjects, as the motives of our wish to go through their country, they said less than I expected. They speak in a remarkably emphatic style, dwelling upon each word and syllable, in the midst of their political discussions, to which I thought there would be no end. One old Chief, when it came to his turn, uttered a long emphatic speech, with great gravity, and made me fear some new dilemma from an unanswerable question—but it was interpreted in very few words, to be a simple query, how we came from our own country, and what sort of a country that is? I informed them that I was the bearer of presents, to be divided, according to their own custom, amongst the *Abor*, villages, and I requested that they would take charge of them, and give notice to the *Bor Abors*, that the concurrence of that more powerful tribe might be had for an equitable division. They declined the office, and in return begged that I would make my own division. I had been given to understand, that the influential men would not dare to accept any thing for themselves in public, but I felt the difficulty of satisfying each in private, not only from the numbers, but from my ignorance of the relative claims of each to consideration; it was therefore by open dealing, and by the magnitude of the present offered to the whole, that I hoped to succeed.

It suffices now to say, that our visit was not attended with any advantageous result; they would not consent to our proceeding further by land, and they assured us of the utter impossibility of our going on by water.

I seized a moment during the conference, when all appeared in perfect good humour, to put questions about the course of the *Dihong*, and could only learn that it comes from the west or north-west, but the *Abors* of this place are evidently unacquainted with it beyond a very short distance, since their country, or rather that of the *Abors*, which they visit, lies away from the banks of the river in a northerly direction. Beyond the *Bor Abors*, on the opposite bank of the *Yamuní* river, are the *Simong* tribe, from whom the former receive the *Lama* goods. The *Reíga* tribe are on the western side of the great river, beyond the *Pasí* and *Mizong* tribes. Some of those present were of opinion, from what they had understood, that both *Regas* and *Simongs* have but a short distance to go to reach the *Lama* country. All agreed in affirming, that the *Dihong* is not navigable, and that it would be absolutely impossible to proceed along the banks.

The *Membú* people promised to inform the *Bor Abors* of our arrival. A hog was voted us by the council, and also a supply of rice, but neither was given with that hospitable feeling, which marks the friendly tribes of the *Míshmís*. It seemed as if they voted their gifts in the necessary observance of a custom, and afterwards gave them with great reluctance. These singular people acknowledge no other authority but that of the "*Raj*,"* or people generally, who make laws at the councils, assembled in the morning, where every one has an equal vote—but

* The similarity of this word to *Rajah*, renders it very liable to be mistaken. Captain BEDFORD mentions their *Rajah*.

though not acknowledged by them, it is evident that some few, either through their superior wealth, hereditary esteem, or real ability, exert a very strong influence on the rest, and can readily sway them to any measure. It would be supposed that this would greatly facilitate the gaining of any point at issue with the *Abors*, but the extreme jealousyof the "*Raj*," and vigilant watchfulness to preserve their democratical rights, render it a matter very difficult to manage to bribe these influential men, and my want of success amongst them I attribute entirely to my insufficient knowledge of their habits, and, consequently, of the proper mode of intriguing with them. It is singular to observe in them such different shades of extreme rudeness and civilized observance of laws, enacted and allowed by them to be necessary for the good of the community. The purpose of the primary article of their clothing (which consists of a triangular piece of coarse cloth, six inches long and four or five broad at the end, by which it is suspended to a string tied round the loins) is vitiated every time they sit down, but of this they seem perfectly careless, indeed, as we discovered in the evening, when prompted by curiosity to enter the *Morang* again, the bachelors are in the habit of basking by the side of their wood fires without any covering at all, and during the day, I had remarked that in the midst of a crowd of both sides the men did, indeed, avoid wetting their next neighbour's leg, but observed no other of the ordinary precautions of decency. However, while many others of the mountain tribes seem superior to them in some points, I have not elsewhere seen them equally ready for a labor like that of constructing the cane suspension bridge. There is more order than usual also, in the regular mode of building their granaries. They have equitable laws to make public burthens (such as the presentation of a hog voted us that day, or erecting a new house for any member, when assistance is required,) fall equally on all. Of their religion, I learned no more than that, like the *Mishmis*, they occasionally sacrifice to a deity supposed to reside in the woods and mountains. The conical mountain, called *Regam*, they believe to be the abode of a rather

malignant demon: for they assert that any one who should attempt to pry into the secrets of his dwelling on the summit, would surely die; as they know from experience.

It was not a little remarkable, that though the *Abors* are said to be the source whence the strange tribes of the *Sri Lohit* are derived, we heard nothing about it from them; on the contrary, their geographical ideas are reasonable enough; they declare the *Dihong* to come from a very great distance, and that it can no where be crossed but by boats or rafts, being always too wide for a cane bridge. The *Lama* country, with which they have intercourse, is situated on the right bank of the river, evidently, because after crossing it from E. to N. to reach the *Reega* tribe, they entirely lose sight of it in their progress to the N.W.

While on the subject, it may be as well to allude at once to information derived from other sources, particularly from another tribe more to the westward. It is said that one route to the *Lama* country is by the *Kâlapani* (or black river), which falls in beyond *Meyong*; it is followed up to its source, and then some snowy mountains are crossed to the inhabited country. Chokis are there placed, and they cannot visit the interior; but the town where they exchange commodities, is situated on the south bank of a very large piece of water, which, as they speak of a feature in it so very remarkable to them, of its "having no current," must be a lake. The Governor of the town is named GENDU, and he wears a shirt of mail, and rides a horse—so they say. They insist that the *Dihong* has nothing to do with the lake, and they conclude it to be distant from it.

Here we have, apparently, the origin of the strange reports current in *Asam*, to which allusion has been made, of the large and magnificent river; or what is quite as likely in my estimation is, that we derive our story from those tribes who are in contact with the *Bhotiyas* on the west,

and that the *Bhotiyas* allude to the veritable *Sampo* passing their country to the north. All the more wealthy *Abors* have cloaks of *Thibetan* woollens; indeed, scarce a man is seen amongst them without some article of the manufacture of *Thibet*. They wear large necklaces of blue beads, which they esteem very highly, and they profess that they are not procurable now; they look exactly like turquoises, and have the same hue of greenish blue—but a close examination discovers in them minute bubbles, marking the agency of fire; they are extremely hard, but the only one I could get possession of, I broke with a hammer, and it had exactly the fracture of fine *Chinese* porcelain.

The very rude tribes, of the existence of which the *Asamese* have an idea, and mention by the names of *Bibors* and *Barkans*, and mentioned by the *Súbanshirí Abors*, under the latter name, as residing to their north, may, perhaps, be the *Sho-ptra* of Father GEORGIUS,* whose account of it need any concurrent testimony, is completely corroborated by a singular note in Persian on a map from *Nepal*, which I have recently seen; they were to the south of *Takpo*, where the Capuchins had an establishment.

After our return to our station at *Shigaru Ghat*, we resolved to try how far we could get up the banks of the *Dihong*, and ascertain the truth or falsehood of the *Abor* reports. The first evening we halted at the mouth of the *Shiko*, in latitude 28° 05′, at the end of a long easterly reach of the river, beyond the *Pasí* villages, and within sight of *Padú*, which is to the north, upon a round hill. The next day we found that the *Pasí* people had taken the alarm, and we had moved but a few hundred yards

* Quod populi hi Meridionales labia gerant incissa Sho-kaha-ptra vocantur. Sho enim Meridiem, Kha os, and ptra incissum designant. In cissionibus infundunt colores varios, rubrum, flavum, cœruleum, alios-que. Pingunt ita Parentes indelebili varietate noatarum tenellula labia infantium, ut cum adoleverint ore semper picti, ac variegati appareant.

when we were met by one of their Chiefs, who came to enquire our purpose. Our conference with him ended by our resolving to visit his village, in hopes that we might thence advance to *Bór Meyong*, and which indeed he led us to expect we might do. We found the *Pasí* village a considerable distance inland, in a south-easterly direction, situated on the top of a small hill, and defended partially by closing up the narrow pass leading to it. It is not so large as *Membú*, but there are about it similar proofs that the people unite for the common good. Very fine clumps of bamboos are seen carefully railed round, for their protection and preservation, for the purposes of building—there is no river of sufficient magnitude to require a costly bridge, but there is a very substantial one of trunks of trees thrown over the *Shiko*.

Our conference with the men of *Pasí* produced little good. We found them willing enough to promise, provided it were but prospectively, but they would *do* nothing, not even dispatch messengers to the *Meyong* tribe, though their reason for refusing to guide us in their direction was, that they could not possibly do so without permission. They gave an admirable answer to our threat of proceeding without their assistance, by leading Lieutenant BURLTON and myself to the top of a more commanding hill, and asking us how we liked the look of the country which we proposed to march through without guides—we saw that they were right. They behaved towards us here with much greater respect than at *Membú*, insisting that we must gratify the Commoners by becoming *lions* for an hour or two, but restraining these in their familiarities.

We returned to prosecute our discoveries on the banks of the *Dihong*, but were accompanied by two or three of the Chiefs, who seemed very anxious to watch our proceedings. We soon experienced a marked instance of their jealousy, for arriving at the end of that reach of the river which is nearly north of *Pasí*, and doubling back towards the

east, (after getting round the base of the low hill intervening,) we found that the north face of that hill is a perpendicular rock, rising from the water's edge, and a smile might be observed on the countenances of our friends, as they watched the effect upon us of the sight of this impediment, for they had no intention of showing us the commodious path which we afterwards discovered on our return! Determined not to be deterred so early in our career, I led the way through the brambles up the rock, and in spite of the opposition of dense underwood, we continued to advance, and we got over the difficulty—but a difficulty it really was, and our people came up very late. In the mean time we missed our friends of *Pasí*. We encamped on a small sand bank, which is to the west of the *Padu* village, on the opposite bank—small hills filled the space to the river left by the direct continuation of the high *Reging* range. There is generally a small bed of stones under the base of the hills, found alternately on either bank, which would add one hundred to two hundred yards to the breadth when the river is full. At present the breadth of water was two hundred yards.

The opening of the hills now showed the direction of the river from a considerable distance to be from W. N. W. I went forward to have a better view of the next reach, and a little in advance I found a well-beaten path continuing along the edge.

At dusk, we were surprised by a rather numerous body of armed men suddenly filing down from the hill to our east. We took no notice of them, and they drew up and seated themselves in a circle at forty or fifty yards distance from us, and found that not only the Chiefs but several of the Commoners of *Pasí* were here mixed with the *Padu* people—whom it seems the former had alarmed with the views of our advance. They remained perfectly quiet, and built their huts for the evening. Finding them not likely to open the communication, I sent to know the intention

of their coming "in such a questionable shape," and received for answer simply, that they were there to oppose our progress towards the *Bor Abor* villages—the vengeance of the tribe would fall on them, they said, if they dared to permit our advance.

I do not suppose that they intended to fight; the alarm of the first musket shot would, at all events, have been sufficient to clear the field—however, it would not do to provoke actual partiality. I therefore informed them that we would not advance to the country of the *Bor Abors* without having previously conferred with that tribe, and that our intention was only to proceed along the banks of the river as far as we should find it practicable, and without interfering with any one, or deviating from our path to seek their villages; that if the information which they had given us, with so many protestations of its truth, should be found correct by us, they had nothing to fear, as we must necessarily turn back, when we should find it impracticable to advance, but we begged for guides to answer such questions as we should put about names and hills or rivers. They thought this reasonable, and putting confidence in our promises, they withdrew in the morning, leaving two guides according to our request.

We continued to advance from an early hour, to near one o'clock, along the left bank, interrupted only by the unevenness of the path, when it passed over enormous blocks of stone on the very base of the hill.

The river was generally calm, and gliding with an easy current. The solitude of the heavy woods was only disturbed by the loud solemn tones of the bell-bird, which we now heard for the first time, and not being acquainted with its note, were almost assured that some solitary being, perched on the summit of one of the wild cliffs above us, was either employed in chiming his matins to the Sylvan Deities, or perhaps, spreading

the alarm of our approach; so exactly does the note resemble that of a deep-toned bell.

We passed the mouth of a small rivulet named *Shibot*, and observed that the beaten path there leaves the great river: our guides soon after informed us, that we had arrived at the conclusion of our journey, and we found, in fact, that the steepness of the mountains much increased since we had left behind us those lower hills nearer the issue of the river to the plains, was now grown very great, and a smooth perpendicular rock soon presented itself to notice, fairly obstructing further progress. There was not the slightest appearance of more favourable ground in advance, and if we did move on by land, it must be by cutting our way through the thickest cane jungles and underwood, in a place infinitely the more difficult from its situation, or the steep acclivity of the face of the mountain.

The breadth of the river was reduced at this point to one hundred yards, and it was still mild and tranquil,* but the form of the hills gives rise to the expectation of immense depth.

We had brought with us a small canoe, thinking it might enable us to get past any very difficult place, and now we got on board and set out to see whether the difficulties by water were equal to those presented by the land. The river partook of the same kind of features as we proceeded, the water's edge was bounded by smooth perpendicular rock, under which

* The question immediately occurs *now* why we did not take a section of the river: we had not the means, and the utility of providing them was not so obvious *then*. But we had taken Note of every petty rivulet joining the *Dihong* from its mouth, a few rods, and were perfectly aware that none of them contributed very sensibly to the quantity of water. Whatever the discharge of the *Dihong* at its mouth, we had here the same quantity nearly—the entire river—a very simple calculation shows us that—for the undiminished discharge of fifty thousand cubic feet per second, and a supposed velocity of only three miles, the depth required is only thirty-seven feet. Mr. KLAPROTH's objection to the size of the river, appears then not well founded.

we advanced by poling against the small projections and crevices, but, after getting over a distance of two or three miles, the foam of a rapid became visible as we turned a corner, and here we soon found our labors were at an end. A stone bed projected from the east bank, few of the rounded blocks of which were less than two or three feet in diameter, and many were of much larger size. The rapid could never be passed on the descent, even were it possible to get the boat up it, and as to carrying the canoe, that was impracticable over blocks of stone of such size. We advanced as far as it was possible on the stone bed, and from its further end climbed up the rock to overlook the river. The next reach was from the west, and the water quite smooth to a considerable distance, the hills high, and equally steep to the water's edge.

We had the curiosity to examine the path leading inwards from the *Shibot's* mouth, and after entering the jungle on the hill up which it wound, found it narrow, but still well beaten.

After our return to *Shigaru Ghat*, we halted to allow time for the arrival of the *Bor Abors*. From the neighbouring villages we had constantly visitors, who come to exchange their yams or fowls for salt.

The *Dúkú* Chief had been down during our absence, and he now made his appearance again, a fine looking well-dressed fellow, with very good manners, and a number of followers. When he stopped in front of our tent, he saluted us with a shrill whoop, more like the crowing of a cock than any other sound I can think of, and without appearing to take notice of us, he continued a long speech, during which he exalted his voice, as if calling to people at a distance, and never ceased beating his right foot on the ground, but every now and then the extraordinary whoop was renewed. When this was over, he good-naturedly informed us that he had given us a specimen of the ceremony of meeting at

councils amongst the *Abor* tribes. We were very much pleased with this man, but could not get any thing from him either in the way of information or assistance in our project. He refused to take us to his village, on the plea that his authority would prove insufficient to protect us from the unpleasant familiarities of his people. He presented some rock salt from *Thibet*, in the shape of large crystals. I think that their possessing this article at so short a distance from our side, is a collateral proof that they cannot have to travel very far for it.

We had little more success with the *Bor Abors* when they arrived, though they seemed equally well inclined towards us with the *Dúkú* party. They assured us that they could not venture to take us to their villages without having prepared the people for our reception, as a very hostile feeling existed, owing to our supposed detention of the *Miris*. They promised, however, to exert their influence, and did not doubt but they should be able shortly to send us down an invitation. They appeared to me to be sincere in professing their inability to answer our inquiries about the *Dibong*—they remarked that they were no travellers, and had little curiosity about remote countries. Whereas we, on the contrary, seemed very inquisitive in such matters—and it would therefore be infinitely better that we should travel and gain, from actual observation, the information we sought, as it could be but imperfectly acquired from those who did not understand our purposes. They could only hold out hopes of our being able to visit their own villages: they assured us that they had no influence with the next tribes, and that we should certainly experience much difficulty in treating with them, and should we gain a footing amongst the *Simongs* or *Regas*, it would be but one step of moving towards the accomplishment of our wishes.

While the *Bor Abors* remained, we had a specimen of their skill in shooting with the bow, which was not particularly creditable to them;

the object was a trunk of a tree, at the distance of one hundred yards, which they always shot very near to without hitting. Lieutenant BURLTON then indulged and astonished them by firing at a mark, placed at the extreme distance to which their arrows would range.

From that time to the present, we have had no communication of importance with the *Abors*. TASSÚR, a Chief of a tribe, removed a few miles more west, gave some hopes of preparing the way for us to a certain distance, but he himself was of opinion that we should not succeed in penetrating far enough for our purpose. However, had I been able to remain at *Sadiya*, I should not have failed to make the attempt.

I have always thought that, in the absence of ocular demonstration, the most valuable information respecting the ultimate course of the *Sanpo*, or rather the knowledge of the exact spot where it leaves *Thibet*, whether about the ninety-fifth meridian of longitude, or beyond the sources of the *Brahmaputra*, in the ninety-eighth degree, was most easily to be obtained from the *Lamas* inhabiting the narrow valley, on the banks of the latter river, who must know, beyond all doubt, whether their territory is or is not separated from *Thibet* by a large river, and must also be informed of the route of the *Lassa* Officers, who come down to them yearly to receive a tribute.

I have now to present the information derived from the *Lamas* by MÚLI, a *Mishmí* Chief of the *Dibong*, with whom I had long been acquainted by name, as the most influential man of the *Dibong* mountains. He says, MESHIPÚ LAMA told him that the *Lamas* call the *Dihong*, *Lassa Chombo*. (*Tsongbo*; he also pronounced it) There are two branches, one from or passing *Lassa*, and the other, the smaller of the two, rising near the heads of the *Brahmaputra*. Below *Lassa* is a town called *Kongbong*,* and the

* *Conc-pou-y* of the Map accompanying DU HALDE?

river also goes by that name. The KHANA DEBA's country is at the source of the above-mentioned eastern branch. The *Lassa* people, in their way to the *Lama* valley, go up the lesser *Dihong*, and cross over snowy mountains from its sources to those of the *Brahmaputra*. They occupy one month from *Lassa*. They do not mention any other large river nearer than three months' journey.

Between the *Dibong* and the lesser *Dihong* is a high range of snowy mountains, which prevents the *Mishmis* from knowing of the existence of the lesser *Dihong*, excepting from reports. I must add, that this information *was not* given in answer to *leading questions*.

This gives a clue which was wanting to the story of an old *Asamese*, now resident at *Sisi*, who was sold by the *Mishmis* as a slave to the *Lamas* when young, and had contrived to make his escape by the route of the *Brahmaputra*, hiding in the jungles by day and travelling by night. As evidence of the truth of his general statement, we have the notoriety of his captivity which led to his being brought to Mr. SCOTT, his acquaintance with the *Thibetan*, shown by his knowledge of words which we drew from a vocabulary, and his offer to accompany me as interpreter.

I twice saw this old man at an interval of eight or ten months, and having preserved in writing the names of all the places mentioned by him, had a satisfactory proof of his sincerity, by comparing the last with his former statement. His recollection, however, was not sufficiently clear to enable me to lay down any new positions.

He says, he resided with a *Lama** and his wife, at the village *Aprawa*, at the sources of the *Brahmaputra*, in the east, beyond the *Mishmi* country.

---

* In the *Asamese* sense—a man of the *Lama* country, not a priest.

He had repeatedly been on trading excursions to the KHANA DEBA's country, distant ten days' journey over snowy mountains the whole way, there, he says, on descending from the height, the sources of two rivers are found, one running to the west, which he was informed is the *Dihong*, and the other to the south. The KHANA DEBA's village is called *Powa*.

The old man always persisted that he travelled eastwards over the snowy mountains; if, however, he were mistaken—and that, in fact, he went nearly north, there would remain no difficulty in reconciling this with the former statement.

I now prepared to accomplish my long projected expedition to the *Khamti* country, on the *Irawadi*, and looked with anxiety at the snow on the mountains whenever a fair day permitted a view of them, waiting till the quantity should be so far reduced that they might be pronounced practicable. It must be recollected that the time of rapid thaw is not that for crossing in safety, and that the scanty clothing and naked feet of the natives of the plains, make them very unfit people to encounter the hardships of a passage through very heavy or extensive snows; both these reasons probably influenced my *Khamti* and *Singfo* acquaintances to urge my putting off the trip to the proper season.

I had left it to the LÚRI GOHAIN to make such arrangements as appeared to him necessary to insure success, and he considering it only proper to have with us some *Kháku (Singfo,)* Chiefs of responsibility, who might become our guarantees in case we should move through any part of the independent territory of that tribe, fixed on the son of the *Gam* of *Latora*, and a relation of the same family, named TANSANTONG, as both well fitted for it, and willing to undertake the office. These two, with their followers, were to add about fourteen to our number: the TAO GOHAYN, and one or two more *Khamtis* of rank from *Sadiya*, with

their followers, numbered as many more, and for a guard we had ten fusileers of the *Khamti* militia. But strong as was our party with this accession, Lieutenant BURLTON and myself derived little advantage from it in our personal comfort. We had but sixteen coolies to carry both our own light equipment of necessaries, and several bundles of presents, besides the few instruments I took.

We embarked our stock of rice and our own followers on the 15th April, in canoes covered over with a thin bamboo mat: the temperature at this time varied from sixty-nine degrees at sun-rise, to eighty-seven degrees at four o'clock, and in the sun it was as high occasionally as one hundred and seventeen degrees. The navigation of the *Diking*, which we entered on the second day, proved very tedious: we were subjected both to delay and inconvenience by the frequent occurrence of storms. Some mention has already been made of the *Dihing*, *(Noa Dihing)*, and an account given of the gradual formation of this river by the natural enlargement of previously existing streamlets, in consequence of the ancient channel having become choked with stones. It is narrow, being seldom more than one hundred yards broad, and its course is tortuous, as might be expected from the equal level of the plains which it intersects. Above *Seyong*, where the rapids commence, its character resembles that of the *Brahmaputra*, beyond *Sadiya*, in similar sub-divisions into small channels. The entire difference of level from *Sadiya* to *Kasan*, (which may be said to be at the extreme limit of the navigable part of its course) is four hundred and nineteen feet, of which upwards of four hundred feet are due to the twenty miles between *Kasan* and *Seyong*, and of this again, the last eight miles below *Kasan* must claim a large proportion: without the aid of a party of *Singfos* from this place, we could scarcely have dragged the canoes up the violent rapids, immediately below it where the river, just before throwing off the *Bori Dihing* branch, washes the base of a perpendicular cliff,

and is cooped in width. The latitude of *Kasan*, at our halting place, where the *Pen* rivulet falls into the *Dihing*, is 27° 30′ 25.″ Between *Kasan* and *Lugo*, which was our first stage of land route—the *Dihing* winds in several channels in a stony plain, occasionally meeting the base of the low hills on either side. On the north bank two or three rivulets fall in, the principal of which is the *Pakan*. The hills on that side are low near the rivers, and are spotted with patches of cleared grounds; on the south side they are at first two hundred feet, and gradually rise till opposite *Lugo* they are five or six hundred feet high, and are all clothed in heavy tree jungle. We passed the river twice by fording, though with difficulty, and opposite the little village of *Gakhen* we had to cross from the south to the north bank in a canoe, and there being but one, we were much delayed. We next ascended to the top of a cliff overhanging the river, and passed through a few fields and much jungle to *Lugo*, a village of five or six houses, and thence we descended from the cliff to the mouth of the *Tungon Topon* rivulet. At this point the plain terminates, and the river is seen to issue from a narrow opening in the north-east.

From *Lugo* there are two routes, one over the *Insong* hill, directly east, which, by disuse, is said to have become nearly impassable; and another which was recommended to us, though not so direct, leading over a lower part of the hills, a little more north. The banks of the *Dihing* are said to be impracticable. We went up the *Tungon*, which is one continued rapid, and after proceeding some distance northward, turned to the east, where the hill is nearly flat, and covered with heavy bamboo jungle. To the north we saw a very high wall of hill connected with *Dapha Bhúm*.

We passed close to the village of *Píshí*, and were inclined to halt there where some sort of hut might be had for shelter, but a jealous feeling

prompting the *Singfos* of the place to deny that we could get water near at hand, we were obliged to follow their advice and move on to the *Toonghoot* rivulet, where the jungle was so thick that it was necessary to clear a space for our encamping ground. We found by the barometer, that we had ascended considerably during the day, as we were now one thousand and seventy-one feet above *Kasan*, (one thousand nine-hundred and eleven feet above the sea.)

The path led through much jungle as before, and the ascents and descents were inconsiderable, till we arrived at the brow of the ridge overlooking the *Dapha*. The height commands an extensive view, but heavy clouds hung low in the atmosphere and hid the summits of the hills. There was a very steep descent, followed by steppes of narrow plains, where the fields are of the *Dapha* villages. We halted at *Kúmkú*, a village of eight or ten large houses, one of which we were permitted to occupy. The hills crossed appeared to be sandstone. We passed during the day, one of those beds of white mud of which there are several of frequent occurrence in this neighbourhood, resorted to by cattle and wild beasts of all kinds, which eagerly devour it. The most remarkable one is at *Súpkong*, on the *Borí Dihing*, where there is a bed of coal in the middle of the river, and the jungles are full of an odor of petroleum. I went to see it. There were two beds; one at a little higher level than the other, but both on the plains, filled with liquid mud of various degrees of consistence. One was twenty or thirty feet across, and the other larger. In the middle, where bubbles of air are seen constantly rising to the surface, the mud is nearly white, and is there in a more liquid state—on the edges green petroleum is seen floating, but it is not put to any use by the *Singfos*—neither is the coal.

Heavy rain compelled us to halt the next day, and we received a supply of rice, amounting to twenty or thirty seers, which the

Gams of the neighbouring villages said was all that could possibly be collected.

It now appeared that we were in an awkward dilemma, for the LÚRI GOHAIN and his friends, who were to have been instrumental in procuring supplies for us, now depended on me to be furnished with a sufficiency for the journey. I offered triple payment, in kind, at *Sadiya*, or a large price in money, but they seemed really unable to supply me, for their poverty would have inclined them to accept my offer, though amongst the *Singfos*, it would be considered barbarous inhospitality to suffer a traveller to pay for his food.

In the mean time the *Dapha* was beginning to rise, and we were advised that it would soon become unfordable (as it actually did), but we had dispatched a large party of the *Khamtis* to a distance to seek for rice, and while uncertain of the result of their search, we could not venture to cross.

The barometer gave the altitude of *Kúmkú*, above the level of the sea, one thousand five hundred and twenty-three feet, the fall of the river between this and *Kúsan* is, therefore, six hundred and eighty-three feet. It rained again on the morrow, but the glad tidings having reached us that the *Khamtis* had met with unhoped-for success, we set out forthwith.

The bed of the *Dapha*, from the base of the high group of mountains, to the junction of the river with the *Dihing*, has some very remarkable features. It varies in width from half a mile at the mountains, to one and a half mile where it terminates; the bank of the valley, on the east side, is a range of conglomerate hills rising in steppes, of which the lower one (of sandstone), two or three hundred feet high, runs nearly straight and parallel with the river, with generally a perpendicular face. On the west

side there are also steppes, but the rise is gentle and the direction is not so straight. The extent of this valley appeared to be six miles in length, but as the river winds round a hill from the eastward, I did not see the nature of the bed beyond this distance. The whole of it is a stony inclined plain, not very uneven; and vegetation has made but little progress in covering the nakedness of the large round boulders of which it is composed. The immense force of the current has worn for the river rather a deep bed, and it is reported, that the suspension bridge, which is nearly equi-distant (half a mile) from each bank, is not liable to be carried away by the floods of the rains, yet it would appear, that in its various changes in the course of time, the river must have alternately washed the base of the perpendicular cliffs on its east, and traversed over to the foot of the easy slopes on the west—how, otherwise, is the existence of so large a stone bed to be accounted for. The idea on first beholding it is, that it must have been caused by some extraordinary convulsion, and the destructive and overwhelming rush of a torrent of waters. The *Digarú* falling into the *Brahmaputra*, opposite *Súhatu Múkh*, presents another instance of similar remarkable feature, excepting that the wide part of its bed is not through hills. The extent of its open stone bed is represented in Captain BEDFORD's Map as twelve miles long, and it has a breadth of nearly one mile, the sides nearly straight, as if the current in its rush from the mountains admitted of no impediment or delay. Indeed, I was informed by the natives, that both these rivers are notable for their sudden and violent floods.

I may be excused dwelling on this subject a little longer to mention a singular occurrence: while the fleet, under Captain NEUFVILLE, was moored opposite to the mouth of the *Noa Dihing* in 1825, the party mention that they were startled one evening by a gust of cold wind from the eastward, which was immediately followed by a violent commotion in the water and sudden swell. Its effects were not severely felt, excepting

in the very last boat of the fleet, which happened to be a Saugor row-boat, mounted with a carronade, which was whirled round and sunk instantaneously, while an immense portion of the bank was as suddenly cut away. This appeared to be a flood from the *Noa Díhing*, the immense force of which was not exhausted in *crossing through the volume of water of the Brahmaputra*, upwards of one mile, at an angle of forty-five degrees, with the current of the latter. The gun-boat was never recovered.

The common bridge for foot passengers, which is re-built yearly, had been broken up in the night by the rise of water, and, though with some difficulty the elephant forded at a favourable place, the current was found too strong for our ponies, which we had brought thus far. The suspension bridge, or *Sakú*, consists of two strong canes, stretched between stages of bamboo, which are secured in piles of the largest portable stones heaped up around them. Whenever the passengers were few, and a cheap bridge were needed, this would answer admirably. A cradle, or long basket, in which a man may sit or lie, is hung on the canes by two loops, and the exertions of two or three men easily pull it across when loaded. The "rushing" of the "arrowy" river below, with its loud roar, cause not perhaps the most pleasing sensations to the novice—but it is perfectly safe. The distance between the points of suspension is eighty yards. The view from the bridge is fine: its features are grand, the mountains are very lofty and bold—their summits were all hidden in dense clouds, but we could see some of the snow, and with the telescope the little threads of bright water trickling down from it in the ravines and chasms. There is a large gap, where the *Inké* falls in from the north between mountains, which we distinguished by the names of 'needle peak,' and 'brown hill.' The gap is filled in the rear by a snow-capped ridge. We had gone some distance up the river to the bridge. We now returned to within half a mile of the *Díhing*, and ascended the sand-stone hills to the village of *Pasíla*, on one of the steppes. It is a new village, of six or

eight houses. There is excellent ground for rice cultivation on the perfect flats of the steppes, and for grain requiring a drier soil, they have cleared a part of the hill where the slope is full thirty degrees. A very good observation gave the latitude of *Pasíla* twenty-seven degrees.

We continued our march the next day, proceeding over the hill eastward, with the *Dihing* on our right. We descended in the same direction and came again upon the banks of that river, where the little *Inké* falls in. Here, on the north bank, a narrow strip of plain stretches along under the low hills to *Lujong* village. We halted a while to beg for a supply of rice, which was given, and then entered the jungle where the river winds at the bottom of contiguous hills, and does not admit of passage along its edge. Opposite to the *Phokong* rivulet, we found a perpendicular cliff of sandstone, and were obliged to cross on rafts of bamboo. On the south bank we passed *Imbong Kusar*, situated in the midst of a fine little cultivated plain, and proceeded to *Tumong Tikrang*, where a miserable hut was pointed out for us remote from the village.

We found that a certain degree of enmity existing between the *Khamtis* and *Singfos*, made the latter a little shy, but having made good our entrance into the GAM's house, we experienced afterwards a very kind reception and much attention. He promised a sufficient supply of rice to enable us to go on, and he fulfilled his promise the next morning, most handsomely giving us a small surplus, and men to carry it two stages.

We were now to take leave of the inhabited district, and enter a wild region, where no paths exist, but those made by the constant passage through the jungles, of elephants, rhinoceroses, and buffalos.

For the last two years none had traversed the wilderness, excepting the two *Mishmis*, who were now our guides, and their only means of finding

their way through it was to hunt for the notches left on the trees by themselves last, and by occasional travellers of old before them. Our coolies had each of them to carry twelve seers of rice for their own use, besides their shallow cooking pot and clothing: what they could carry in addition for us, was a mere trifle each man. The elephant was sent back as no longer useful. The perambulator had been left at the *Dapha* with the *Burman* who wheeled it, who had already fallen ill. I had offered in vain a handsome reward to any one who would undertake to convey it on, and afterwards found that it could not possibly have been used.

The next march was entirely along the banks of the *Dihing*, the plains terminating a short distance beyond the village, where a boat conveyed the party across to the north bank. In the plains, the river is occasionally fordable, but never so up here. We kept upon the edge, making very slow progress over large blocks of rolled rock. Lieutenant BURLTON discovered a sycamore tree amongst the jungle, and we observed thin strata of coal alternating with blue clay in the sandstone rock. About half way to our journey's end, we encountered every now and then a perpendicular cliff, which we were obliged to clamber over with much loss of time. The rapids here frequently deserve the name of cataract.

We halted on a small stone bed. The thermometer stood low for that season of the year, (3d May) much lower than at *Sadiya* at the same time. At sunrise it was sixty-two and a half, and seventy-four and a half at five in the evening, when the state of the barometer was noted. We were then one thousand seven hundred and fifty-nine feet above the level of the sea, and two hundred and thirty-six feet above *Kúmkú*.

A midge, called *Dam Dúm*, common to the hills, began now to trouble us. It flies on a noiseless wing, and has no hum like the muskito to announce its treacherous attack, neither is the bite immediately felt,

but a little blister is soon after seen, filled with extravasated blood, and the itching becomes so intolerable that it defies the utmost exertion of patience. Our friends, with the "bottomless breeks," were infinitely worse off than we were, whose hands and feet only were exposed, and indeed those of the plains were, in a few days, almost disabled, by the inveterate sores caused by these abominable pests. I had seen them before in the *Míshmí* hills, but it was then cold weather, and the annoyance was not to be compared with what we now found it.

On the 4th May we left the *Dihing* entirely, ascending the hill immediately on starting. Our guides trusting too much to themselves, on first entering the jungle, soon betrayed signs of doubt, and informed us that they had missed the way and must search back for their notches. In this search they were occupied two good hours, and a most unpleasant anticipation it gave us of what we might expect when fairly advanced into the wilderness, but our guides received the occurrence as a lesson, and invariably afterwards proceeded with the utmost caution. We had either tree or bamboo jungle the whole way, in which the leeches are innumerable, every ten minutes a cluster of eight or ten might be knocked off from each ancle. The direction was nearly north-east, and we were proceeding obliquely across spurs of a high range, the summit of which lay to our north: we were for ever ascending or descending, and at our halting place the barometer indicated an elevation gained in the course of the day, above the level of the *Dihing*, of two thousand eight hundred and twenty-one feet.

The temperature, at sunrise the next morning, was much lower, being only fifty-seven degrees. The men lent us from *Tumong Tikrang* to carry rice, now took their leave. We could not induce them by any offer to proceed further into the hills: two of Lieutenant BURLTON's men were attacked with fevers, and we very anxiously endeavored to

persuade them to leave us and return to *Sadiya*, but they would not. They were probably afraid of being seized as slaves by the *Singfos*. We first had to descend considerably by a steep and winding path to the *Moha Pani*, which comes through a cleft from the north-east, and immediately commenced a most laborious ascent at the opposite mountain. The rock appeared to be gneiss and mica slate. About ten o'clock our guides sat down by a little pool of muddy water, which they warned us might be all we should see that day; they laughed, and we did not understand them quite so literally as they meant it. Again we set out on the ascent, and surmounted one height after another, each of which in succession appeared to be the summit of the mountain. We had left the banboo jungles, and were amongst dwarf moss grown trees, which spread their crooked branches in wild irregularity, when showers passed us every few minutes and made it very cold. Our guides darted on at an increased pace, and though our eagerness to arrive at the end of our toil, made Lieutenant BURLTON and myself outstrip the rest of our party, we were much behind our guides. One large peak at last long deceived us with the expectation that it must be the last. Snow is said to remain on it to a late season. But the top of this, when reached with many a weary and slow step, gave us only a commanding view of the next still higher ridge. At four o'clock, after being often in danger of losing our way, we came up with our merry guides, who were sitting, cooking their rice under the hollow of a large fallen tree. We asked eagerly for water to quench the thirst now become painful, and were answered by taps on the tree above them, and a nod of intelligence. In fact, this "Diamond" of the mountain—this old hollow trunk, contained all the water that we could expect to meet with that day. It is torn from its roots, and it did not appear how water could collect in it, except from drippings from overhanging branches; however, our guides asserted, that it gradually fills again within a few hours after being emptied. We had already learned to cook for ourselves, as the only means of securing a dinner, and we

had that day one fowl left, on which to display our talents, which were ever after degradingly employed, in merely boiling our pot of rice. The people were much fatigued, and arrived late, and it was with difficulty that we got a miserable hut built to shelter us from the rain, which continued all the evening. The thermometer stood at sixty-five, at five o'clock, and the barometer informed us that in addition to the height of our last halting place, above the *Moha*, we had climbed up three thousand eight hundred and forty-nine feet, and were eight thousand four hundred and twenty-nine feet above the level of the sea.

At day light on the 6th, the thermometer was at forty-six. The water of the "Diamond" had been fairly expended the night before, and I had placed a sentry to secure a proper distribution in the morning, but it was nearly empty, and what little had collected was too dirty to use, we therefore marched before breakfast, contrary to our usual custom. After climbing one more peak still higher, we did at last perceive the summit of *Wangléo Bhúm*, but as it is a large cone, the path led round it as less laborious than clambering over, and after two hours march we found a small rill of water, trickling down one of its ravines, which barely sufficed for our morning's meal. We noticed a new description of bamboo, a little below the summit on the north face of the mountain; not growing, as usual, in clumps, but singly, and having a coronet of sharp thorns round each joint. They follow the moss covered trees of stunted growth, and prevail to a considerable distance on the descent, where heavy forests and thick underwood again occur.

It is now time to convey a better idea of our situation according to the knowledge we had then acquired. We were then crossing that ridge of mountains which separates the nearly parallel streams of the *Dihing* and *Dapha*, the commencement of which I have already mentioned as the conglomerate and sandstone cliffs of *Pusíla*. The highest

part of its crest connected with *Wangléo*, by a succession of peaks, was still further east on our right hand. Beyond the *Dapha*, at no great distance on the north, the Beacon now bore three hundred and thirty N. thirty W., and a high wall of mountains, capped with snow, followed, stretching eastwards to some distance, and then turning south, giving rise to the *Dapha* and *Dihing* on this side, and to several rivers flowing into the *Iráwadi*, on the other.

We passed nothing extraordinary on the descent, but a beech and fig tree, the latter producing very large fruit; and some sweet scented violets. At the bottom, we emerged from the jungle on a beautiful little plain, covered with short grass and fern hills, abruptly rising on either side to a majestic height, and some deeply clothed in snow closing the distance. We halted on the banks of the *Dapha*, at a spot frequented by hundreds of deer, elephants, and monkies. The former were too wild to allow us to shoot one.

We were still five thousand four hundred and thirty-one feet above the sea. Some idea may be formed of the rapid and tumultuous current of the *Dapha*, from the circumstance of its falling three thousand nine hundred and eight feet, in twenty miles of its course from hence to *Kumku*, where I have already stated the altitude as one thousand five hundred and fifty-three feet above the sea. We saw a new fruit of the plumb kind, with a very thin skin and good flavor; and some wild *líchís*. A good observation gave the latitude 27° 31′ 20″.

The next march was, for some distance, nearly east along the boulders of the edge, or in the track of wild elephants in the jungle; then turning more south, after the separations of the *Dapha* into two branches, we crossed the left branch by wading, where it is fifteen yards broad, and commenced our ascent up the great pass. We halted at two o'clock in

cold and heavy rain, but our people who were now suffering very severely from fevers and swollen legs, were many of them not up till late. It was our constant employment on halting, as soon as we could get a hut built, to make a fire in front and hang up our clothes to dry; had we not luckily been provided with a piece of wax cloth, which was of great assistance in keeping out the rain at night, we must also have sunk under this unaccustomed exposure to severe weather. The total ascent above our last halting place was two thousand four hundred and nine feet—total elevation, seven thousand eight hundred and forty feet. When we resumed our march at the ascent, early on the morrow, we were, in the space of an hour, on a level with snow, distant two or three miles, on the opposite mountains to our right and left. We could plainly trace the waters from their sources, and in the melting snow, which still lay in considerable quantity in the ravines. The whole scene possessed, in a high degree, the features of wild and romantic grandeur. We were ascending the ridge which separates the two branches of the *Dapha*, and were fast approaching to the altitude where they have their origin: we were near the end of a long but large dell or chasm of which the *Wangléo*, and the higher mountains succeeding it, form the one bank, and the Beacon with its high wall, of which it forms a splendid pinnacle, the other. In advance, the pass to be surmounted, formed the connecting ridge between the two sides.

The trees were now growing in all directions, seldom perpendicularly, and all covered with coarse moss, excepting the smooth barked rhododendron, which was then in fine flower. Lieutenant BURLTON detected both beech and ash in the course of the day, and at a great altitude we found abundance of the plant—the yellow bitter roots of which constitute so principal an article of *Mishmí* traffic with the *Lamas*. On our side there were no firs, though they abounded on the northern mountain, even at a much lower level. Towards the summit, there were some large bare

blocks of clay slate. About ten o'clock we reached the snow, which does not cover the whole apex of the mountain, neither does it always lie in the deeper or more shadowed spots, but in patches, which we were frequently obliged to cross: the ground was sodden with wet, and unpleasant in the extrême to walk over. We plainly perceived that our difficulties would have proved much greater, had we made the attempt earlier in the year.

A violent storm of hail, thunder, and lightning saluted us as we reached the top, and prevented our distinguishing more than that the heavy snows on our right extended a considerable distance. I shall say no more of the storm than that, at such a place, a more unpleasant and disheartening occurrence could not well be imagined. Our guides appeared much frightened, and they went scampering down the most villanous ground we ever saw, while we followed sinking to the ankles in a sodden mass of rotten leaves and moss, and pushing our way with difficulty through the thick fern. The lightning set fire to one of the fir trees on the opposite height, and we could long distinguish it burning. In the pass, we found a sad proof of the truth of the statements respecting loss of life, which has generally befallen a party making the passage. I picked up a skull said to be that of a *Singfo*. Very much to our annoyance we learned, from some of the party joined from the rear, that two of Lieutenant BURLTON's men had lain down and refused to move on. They were brothers, and one of them, though not himself complaining, had determined to remain by the other, who was overcome by mere fatigue; to assist them was impossible; carry them we could not, even had we rice sufficient to enable the people to bring them on at a slow rate. We halted on the *Phúngan* river, near the course of which we had descended from its sources, but it was of considerable size when we first saw it. It continued to rain very heavily the next morning, and we marched much later than usual. We were anxious to halt altogether for the day, to let the unfortunate men come up, and to recruit the strength and spirits of

the whole party, who greatly needed rest. Several had severe fevers, and nearly all had swollen ankles and dreadful sores from the bites of the noxious *dâmdûms* and leeches. Our stock of rice, however, would not admit of a halt; we therefore continued on our descent down the *Phûngan* pass. The ground was sodden as yesterday, but not so bad. Leeches and *dâmdûms* scarcely bearable: we once took the trouble to count the collection of about half an hour, and tore thirty-five leeches from one leg. We went through thick jungles of tree and prickly jointed bamboos, and occasionally came out upon the *Phûngan*, but the steepness of the hills allowed us to see nothing beyond the deep ravine which we were moving down, and the closeness of the trees made it extremely difficult to me to note any bearings of the direction we were travelling in. We crossed five or six rivulets which join the *Phûngan*, having their origin in the snows on the right bank. We halted sooner than we ought, considering our supply of rice. Another of Lieutenant BURLTON's men, a very fine young lad, had complained at starting of his weak state, but promised to come on slowly; however, he did not rejoin us.

The next morning we made such arrangements as we could, to learn the state of the three now missing. We left two men at the halting place, and sent back two more, with the promise of a reward, if they should succeed in bringing on the unfortunate loiterers. We felt less anxiety about the first two who lingered behind us, as they had but five days' journey to return to the last *Singfo* village, and if they preferred coming on, our track was now well marked by the passage of so large a party. Our path was better to day than that of yesterday, but the march was equally uninteresting, confined in a narrow ravine between two high mountains: the only object we ever got a glimpse of beyond it was some towering snowy peak. The direction of our journey was not easily guessed. We crossed the *Phûngan*, to the north bank, half way by wading, and the remaining half by a bridge, which was speedily erected by the *Singfos*. We then

left the banks of the *Phúngan*, and halted early on a little rivulet falling into it. We should have gone farther, but we were told that we should find no water until we had crossed the next hill. We picked up a walnut in the jungle, but could not find the tree. When the people rejoined us whom we had left behind, they stated that they had found the last lingerer, but that as he was unable to come on with them, they had given him a flint and steel, which he was in want of, and he promised to follow us slowly.

We set out again early in the morning, and were employed till twelve o'clock in a most fatiguing march over a hill. At the bottom, on the opposite side, we met with a small rivulet, and it was earnestly debated whether we should halt or not. The *Mishmí* guides were the only people of the party who pressed for making an attempt to reach the next place where water could be obtained—and their argument being a very cogent one, with the small stock of rice remaining, we went on, and, after ascending and descending two more hills, we halted at four o'clock with the guides and some of the *Singfos*, who appear to have more stamina than the *Khamtis*. The remainder of our people did not arrive till late at night, and some not till the next morning. Our own pots and rice not having been brought up, we got a *Singfo* to lend from his store, and our hands supplied the place of spoons, while the pot lid served for a drinking-cup, out of which we could yet enjoy our gin and water. Heavy rain all the evening; but since crossing the *Phúngan*, we have always been fortunate in halting where wild plantain leaves could be procured for building our huts. The hill crossed is of sienite.

We started in heavy rain again the next morning, and descended to the *Namsaï* river, which appears to rise also in the *Phúngan Bhúm*, near the pass, and runs parallel with the *Phúngan*. I did not understand whether the cause of our leaving the banks of the latter was the difficulty

of the path there, or that this is the less circuitous route. Both rivers flow into the *Namlang*, and the distance of their mouths is less than a mile. This was a most uninteresting day's journey, for we were surrounded by heavy fogs and mists, which prevented our seeing thirty yards. We went through the usual description of bamboo and tree jungle—on the side of the hill, above the *Namsali*, the mud was ankle-deep, and the leeches innumerable—fine tall nettles too, growing in the most abundant luxuriance, added to the number of our annoyances. Near the end of our march, the utmost exertion of the strength of our guides was necessary to force their way through the entangled jungle; no traces of a path existing.

We halted at the deserted *Mishmi* village of *Aleth*, to which our guides had belonged, situated at the point of junction of the *Namsall* with the *Namlang*, the people have been chiefly removed to the *Tungon* rivulet, under the influence of the *Singfos*. We found around the ruined houses a great quantity of wild raspberries of a large size and sweet flavor.

At starting from *Aleth*, our guides were literally obliged to cut their way to the *Namlang*, which we soon came out upon; it was a very pretty little river, thirty or forty yards broad, and running with a slow smooth current, excepting when a rapid here and there occurred. Low hills formed its banks on both sides. We proceeded along the edge, sometimes on the boulders and sometimes knee-deep in the water, to some perpendicular cliffs, and then through the jungles above, which are more abundant in leeches than any place hitherto seen. Every six or eight hundred paces, a fresh collection of thirty or forty might be plucked off the ankles; but the profuse bleeding which they cause is not sufficient to reduce the swollen feet of our followers, who are suffering so much that it is only wonderful that they can get on as well as they do. Lieutenant BURLTON was among the rest seized with a paroxysm of fever on the march: several of the *Singfos* were also sick. I have omitted to mention, that I had again sent people back with

the hope of bringing on the poor *Asamese*. They rejoined us this evening; and to our great surprise, were accompanied by one of the two men who stopped on the *Phúngan* pass. He informed us that he had remained until his brother expired, and that he had been four whole days without food or fire. The other poor lad was found very near the place where we left him, and was brought across the river, which he could not possibly have forded alone, but he crept into the huts of our halting place, and there laid himself down to die. We were surprised about ten at night by a very sudden rise of the river, equal to three or four feet, accompanied by a rushing and loud noise: it came so unexpectedly, that the people who had built their huts near the water had not time to remove all their things: it subsided almost as rapidly as it rose.

The next day, the path led chiefly along the edge of the water and over steep and slippery rocks. Still an unvaried aspect of dark jungle. The direction, since leaving *Aleth*, nearly due north. We crossed while the river was one hundred yards broad, by wading, but with great difficulty, for many, from weakness, were unable to stand against the current without help. Lieutenant BURLTON had his fever again at the time. Shortly after, we re-crossed by the help of *Sakos*, which, from the rise of the river, were nearly under water; but here the sight of some new faces gave us fresh alacrity, and we hailed our approach to a civilised country with that joy, which those only could feel and estimate who had suffered from fatigue and privation as we had.

The *Múlúks* and *Khamtis* who met us were extremely civil, and welcomed us with every demonstration of good will. Beyond the first crossing place, the country opens out into a narrow valley, which leaves a small plain at each alternate bend of the river; none of these, however, yet presented signs of habitation; but leaving the right bank and passing through a narrow belt of jungle, we entered on a cultivated plain of a

mile or more in width, (to us an Eden!) and were delighted with the appearance at the further end of a nest of comfortable houses.

We were now met by two *Khamtis* of rank, who informed us that they came from the Raja with instructions to receive us; this could not be true, as the capital is a good day's journey distant; however, they, with great politeness, procured us every thing that could be wished, and professed anxiety to be made acquainted with our wants, in order to gratify them. We were recommended by our kind friends to move the next day to another village, at a small distance, where we could be furnished with a better house; but on account of Lieutenant BURLTON's ague fit, which was very severe, and also on account of the fatigue of the whole party, we were obliged to halt. Rain had annoyed us on the march yesterday, and continued again all this day. The village is of twenty or thirty houses, built of bamboo and mats on *Macháns*, and, contrary to the practice of *Asam*, they are assembled near together, with only streets between them; the buffaloes, pigs, and poultry take shelter in the lower part. The *Múlúks* are a distinct tribe, and their language has no affinity with that of any other neighbouring tribe. This appears very remarkable, as their number is only reckoned at five hundred houses: in former times they were an independent people, inhabiting the plains of *Húpong*, on the *Dihing* river, south of the *Phúngan* pass. They declare that they were plundered and dispersed by the *Singfos*, and that one-half were carried off and made dependent on these marauders, while the other half fled towards the *Irawadi*, and placed themselves under the protection of the *Khamtis*. Their only produce is rice, *marka*, mustard plant (used as a vegetable), and a bad species of onion. Their dress is the same as that of the *Khamtis*, excepting that it is of ruder fashion, and of inferior cloth.

We removed in the morning to *Námbak*, another *Múlúk* village, at no great distance, situated on the *Námbak* rivulet, and fortified with a

strong palisade. The intermediate plain was all cultivated, with a good path through it, improved by putting down boards at all the broken places. We passed a third village on the road. A very respectable house was given us to remain in, built to serve the purpose of a town hall, furnished all round with a boarded seat, and raised high on strong posts. The fame of our white faces and musical boxes attracted to us an immense crowd the moment of our entry, who disposed themselves, as many as they could, in the hall above, and many more under the *Machán*, or mounted on the bamboo walls—but they were perfectly well behaved. In the evening, the Raja's two nephews and brother arrived in some state, accompanied by a few musketeers, and little *Chinese* gongs, to announce their arrival; they were equally polite with our former conductors, handsomely dressed, and fine looking men. They wished us to proceed another very short stage on the 18th, to the *Palanseng Gohain's* village, that we might, after our fatiguing march, suffer as little as possible in the remaining portion of our journey. They appeared to feel great anxiety in the question whether we should be induced to take part in their wars with their neighbours of *Múng Khamti*. We made them presents of scarlet cloth and muslin turbans, with which they were much gratified.

We remained the next day, according to their request, and had the same sort of employment in entertaining the great men with sights of our apparatus, of which our guns and pistols most excited their attention. Our people were still complaining of their sores and swollen legs; indeed, several had been left at the first village, who were actually unable to come on, and it had become my turn also to fall sick. The mode of providing our party with food was, to quarter them two together in a family, who announced the hour of meals. To the N.W. we could perceive the snowy mountains at the source of the *Namlang*, but this was the only direction in which the view was not limited by high hills.

On the 18th we continued our journey a short distance to the *Palanseng's* village, beyond the *Namlang*, which we crossed by a rude bamboo bridge, the river below running at the rate of full ten miles an hour. On the opposite bank, we passed over some high ground, and then entered another small plain, surrounded by low hills, some of which are also cultivated. We heard the Cuckoo near us. The village called *Kúmtong*, is situated in the middle of the plain on the *Namkúmtong*. We here received a visit from another relation of the *Raja*, who came with his eight or ten followers, armed with muskets of all sorts and dates—there was one marked G. R., and some fuzees of 1780, marked U. E. I. C. We were detained another day at *Kúmtong*, by very heavy rains.

On the 20th, it continued to rain heavily; but as this was to be the last day's journey eastwards, and we were inclined to enjoy all the rest we could without interruption, we set out. After wading through the *Kúmtong*, we shortly began the ascent of the hills, separating the *Namlang* river from the plains of the *Irawadi*. The path being well beaten, was infinitely better than any we had traversed, but it was slippery from the rain, and the same sort of jungle, with which we had been so long acquainted, covers the hills. From the second, we at last, about two o'clock, beheld at a distance the object of our deepest interest; the *Irawadi* winding in a large plain, spotted with light green patches of cultivation, and low grass jungle: better eyes than mine could distinguish *Manchi*, the capital. To the pass succeeds a long narrow dell, gradually expanding towards the plains; but we saw no farther signs of the residence of men till four in the afternoon, when we entered a cultivated tract. Soon after, we passed the tomb of some great man, built of clay, whitened over, with a vase-shaped gilt top; and surrounded with many tall poles, which are ornamented in the *Chinese* taste, and have long flowing pendants of wove silk; these poles had not a less tasteful appearance from being inclined from the perpendicular. We were met at last by the *Raja's*

son, with two ponies for our use, and our approach towards the villages was noised by incessant beating on two little gongs. We passed two or three temples, all built of bamboo and grass, but of *Chinese* design, and on our left, the strongly stockaded village *Choktep*. Near the great village or town; we saw two much finer tombs, built of pucka, and having griffins and various other non-descript animals at the corners and about them. The town is closely built, but large, and fortified with a high palisade, having pointed bamboos ingeniously worked. The first appearance of the houses strikes with great surprise those who are not accustomed to the style of building, as the floor on which the family live is completely hidden under the low projecting eaves, and all that appears to view is the open and dirty ground floor, crowded with buffaloes and pigs. The *Raja's* house is in the centre of the town, enclosed within an interior palisade. We passed it about six in the evening, and were led to the Town Hall, which is contiguous to it. As scarcely any of our people had arrived, we begged the young Prince, who had been in attendance on us, to give us a dinner, after their own fashion, which he readily did, and it proved a far more sumptuous repast than we anticipated: it was served up in the lacquered *Burman* boxes, which had several compartments, and trays to hold rice, nicely laid on fresh plantain leaves, and a number of small *China* basins, containing eggs and meats, variously cooked; and, at least, so far superior to our own culinary productions, that we hinted our inclination to have a breakfast in the same style. They most obligingly continued to provide us while we stayed, and we generally had presents from other families also, at the known time of our taking our meals. They also gave us a spirituous liquor, very much like whiskey, though inferior in strength, which was the more acceptable, as our own small stock was nearly exhausted.

At noon, the next day, the *Raja*, as he was called, paid us a visit in state. He was preceded by four or five small gongs, about five and

twenty musketeers, several sword and shield-bearers, and a gilt chatta, the last given him by the *Burmans*. The shields are of substantial buffalo hide, well formed and varnished black, with gilt devices on them. The swords were all *Burman*. He maintained so much reserve, that our conversation was not very interesting. After avoiding to give an answer to several questions of a trivial nature, on such topics as I considered required neither privacy nor previous consideration, he hinted that he could be more communicative in the absence of the crowd. Amongst other questions, I asked whether they had historical records similar to those kept in *Asam*, but at this time I got no direct reply, and afterwards, during our stay, could never get the Chiefs to allow that they had them, though informed by the *Lúrí Gohaín*, that it is a custom in each village to treasure up a record of all remarkable events. He spoke of the system of warfare and mutual aggression, which has endured for the last fifty years, without either side having gained a material advantage over the other: he lamented it, but saw no prospect of its termination. Our friends had, but a few months before our arrival, suffered the loss of the larger village *Múng Khamti*, which had long been their capital, and they informed us that they were now debating measures for surprising and recovering it, in their turn. All our presents were very much admired, particularly a handsome cut glass bowl, but our guns and pistols excited by far the greatest interest.

After his departure, the visit of another *Raja* was announced! and though introduced with much less state and ceremony, I discovered that a mistake had been made in attributing to the former, the chief share of authority. When the matter was afterwards cleared up, it appeared that the aged gentleman now with us, is the Legislator; while his nephew, as a man of action, holds the executive power, in the capacity of War Minister and General. The manners of the old man, the *Búra Raja*, were remarkably mild and pleasing; he expressed great curiosity about us, and

regretted much the want of a ready communication, which alone prevented his putting the numerous questions which he would be glad to ask. He said that the only drawback to the pleasure he experienced in seeing us, was the fear he had of the *Burmans* putting misconstruction on our visit, and of their taking advantage of it to oppress him and the country anew. We represented the friendly state of the two powers, and endeavoured, by such arguments as occurred, to lessen his fears; however, if there be any danger, it is yet remote, for a long period has elapsed since a *Burman* party has visited the country. Finding him less of the wary politician, and of a more frank and communicative disposition than his nephew, I, in my turn, made some geographical inquiries of him, but I found his information very limited. The *Khamúngs* inhabit the lower mountains, beyond the *Irawadi*, visible at the distance of twenty or thirty miles to the eastward, and a poorer and more savage race, the higher ranges. The former supply the *Khamtis* with salt, and have the art of forging the *Daos*, or swords, so much in request; the latter are scarcely known by name, and are said to be naked and barbarous; their habitations are not supposed to extend to the other side of a high range, which is in winter snow-capped. The *Lukyang*, or other *Chinese* rivers, are not known. With the *Lama* country, there is no immediate intercourse whatever, traffic is carried on, as in *Asam*, through the intervention of the *Mishmis*, who cross from the *La Thi* (falling into the *Brahmaputra*,) to the *Namseya*, the principal branch of the *Namlang*. No road exists by the sources of the *Irawadi*. Majestic peaks, covered with perpetual snow, are seen from hence, in which the *Irawadi* and one branch of the *Brahmaputra* have their rise.

I was lame from an unpleasant sore in the foot, contracted on the march, and Lieutenant BURLTON was not at all in order for moving about. On the third day of our stay, however, I strolled out to the temple, and saw the chief priest, a fine old fellow, who was completely delighted with the wonders he saw: he and his attendants subjected me and my dress to

a very close examination, laughing heartily: the only question they put was whether *our* clergy take to themselves wives or not, and on being answered in the affirmative, they raised a roar of laughter, and the Chief assured me he was quite shocked. The thatch-roofed temple is neither so large nor so elegant, as some of those seen on the way; nor is there any thing remarkable about the gilt images of GODAMA, or the ornamental work within. A gift of a few rupees delighted the whole of them, though the only use they have for money is to enrich their temple with new ornaments, or to purchase some trifling luxury. Their customs appear precisely the same as those of *Ava*. Early every morning, we saw three or four of them hurrying through the streets of the town, preceded by a boy with a little bell, each holding a lacquered box, in which he collects the offerings of the people, presented generally by the women, who stand waiting at their doors with a portion of their ready-cooked meal.

We took advantage one evening of a requisition for our musical boxes, to introduce ourselves into the interior of the *Búra Raja's* house. We found it spacious, the south end terminating in an open *machán*, or terrace of bamboo work, and a second enclosure within, divided the private apartments from those which, at all hours, appeared open to the populace. To give space in breadth, two houses are erected contiguously, and a trough of wood closes the aperture between the thatches, and serves to carry off the water, which would otherwise descend into the house. The women, few of them, boasted much beauty, and they were plainly though neatly dressed; they behaved with great decorum, and sat together along one side of the room. The men turn up their hair, and form a large knot with it on the centre of the head; but the women, either from the natural profusion of their tresses, or from their taking more care of them, far excel the men in the height of their top-knots, which they wear nearly in the same fashion, but divide it with silver ornaments and small glass

beads. Their petticoats accord better with our notions of female delicacy than the odd dress of *Burman* ladies.

According to previous engagement, we paid a visit to the warrior *Raja*, who resides at *Phankaí*, nearly three miles from *Manché*. The road was over a perfect plain, partially cultivated, and prettily studded with clumps of trees and bamboos. The country is not unlike *Rewa*, excepting that it is not varied with similar undulations. It is intersected by a number of little rivulets. *Phankaí* is also strongly stockaded, and an interior palisade surrounds the *Raja's* house. A separate dwelling had been prepared for our reception, but either through ignorance or want of politeness, the *Raja* kept us waiting full half an hour; and when he did come upon a hint that we were growing tired, he seemed to consider himself quite at home, wearing a very shabby dress, and observing none of that ceremony which had been remarkable in his visit to us. No conversation passed of either moment or interest, for he exhibited uneasiness with us, when questions were put, even of the most simple nature. We were anxious to make arrangements for a visit to the *Irawadi*, which we could not well contrive at *Manché* on account of the enemy's strong hold—*Mung Khamti* being in the way. They met our proposition as usual, with a long list of difficulties and dangers, and would by no means consent that Lieutenant BURLTON and I should mount their ponies, and trust to our own good management for encountering the enemy without hostilites resulting. They objected to every thing, but going in posse by the nearest route, with drums beating and colors flying, and indeed they played their part very well, to get our aid in a brawl with the opposite party. When however they found us fixed to have a sight of the *Irawadi*, and to avoid fighting where we had no quarrel, they consented to furnish ponies and a guide that we might see the river higher up at a point sufficiently removed from danger. A dinner of inferior cookery to that we had been

used to, was presented, and we were much pressed to remain a few days—however we liked our former quarters much better. In the evening, the women all assembled on a large mat extended on the turf, to hear our musical box. Neither they nor their men were in holiday suits, but they looked very clean and behaved well. Their high head-dress is very singular, and not altogether inelegant. In the morning, we went off at an early hour, accompanied by a guide mounted on a third horse, and in two hours we crossed the plains obliquely to the river's edge.

The *Irawadi*, we were surprised to find but a small river, smaller even than we anticipated, though aware of the proximity of its sources. It was not more than eighty yards broad, and still fordable, though considerably swollen by the melting snows, the bed was of rounded stones, and both above and below where we stood we could see numerous shallow rapids similar to those in the *Dihing*.

As to the origin of the *Irawadi*, I felt perfectly satisfied from the moment I made inquiries at *Sadiya*; but since further evidence, founded on the report of the natives, might not have satisfied those who had adopted Mr. KLAPROTH's opinion, that the waters of the *Sampo* find an outlet through the channel of the *Irawadi*, I had resolved, if possible, to have occular and incontrovertible demonstration; and I could not help exulting, when standing on the edge of the clear stream, at the successful result of our toils and fatigues. Before us, to the north, rose a towering wall, stretching from W. to E. offering an awkward impediment to the passage of a river in a cross direction, and we agreed on the spot that, if Mr. KLAPROTH proved determined to make his *Sampo* pass by *Ava*, he must find a river for his purpose considerably removed towards or into *China*.

The scenery was of the finest order, and its effect was heightened by the thin mists hovering on the bases of the blue mountains. One majestic

peak to the north, peeping from a mantle of light clouds, was very conspicuous from its superior height, and from its deep covering of pure white snow, and the long ridge leading away from it to the westward was similarly clothed, but streaked with shadows of delicate blue. On the E. and W. were peaks heaped on one another in the utmost irregularity of height and form, and at all distances. Our guide pointed out the directions of the two larger branches uniting to form the river, the *Namkiu*, by which name the *Khamtis* distinguish the *Irawádi* throughout its course to the sea, and the *Namyen*, the western branch. The mountain, at the source of the latter, bearing 315°, and the former 345°. We could also perceive the snow to the westward, some continuing as far round to the S. W. as 240°. The plain we rode over is covered with low grass and crossed in several directions by narrow belts of tree jungle, which mark some water courses filled in the rains. A great part of this plain is said to have been cultivated before the disturbances and dissensions introduced by the *Burmans;* and there were many *Khaphok* villages on it. South of where we stood, the river takes a bend inward towards the west, round the base of a low ridge, which projects from the hills on that side.

The climate appears very similar to that of *Sadiya*, at the same period. After rain, the thermometer fell five or six degrees, and the air was delightfully clear, while the sky was partially covered with thin clouds; but within three or four days, the atmosphere thickened, the thermometer regained its highest range, and it became excessively close till another storm relieved us. In the morning, at sun rise, the range was from 72° to 78° in the shade, and at the hottest time of the day, from 84° to 94°. The nights were comparatively cool and pleasant. The duration of the rainy weather is about the same as in *Asam*. Three or four months in the year, or from the 15th October to February, may be calculated on as clear and dry, and the remainder is perfectly uncertain—however, the heavy rains set in about the 15th June, and continue to the 15th September.

The elevation above the sea, marked by the barometer, is one thousand eight hundred and fifty-five feet. If *Bhammo* be five hundred feet above the sea, which would be equivalent to a fall of the river of eight inches each mile, there remain one thousand and three hundred feet of fall in the three hundred and fifty miles between this place and *Bhammo*, which sufficiently accounts for the greater part of that distance being unnavigable, excepting for small canoes.

Several observations during our stay, gave the latitute of *Manché* 27° 29″ 16·5, and that of *Phankai*, the *Raja's* place, 27° 26″ 13·6.

Confined to the house by lameness, and unable to go abroad to make researches, we were generally employed in entertaining a crowd of visitors, who, without ceremony, and at all hours, mounted the steps and sat themselves down in the hall, which was common to ourselves and followers.

I have already mentioned, that I received very unsatisfactory answers to my questions concerning their history. I was induced to defer making any notes on the subject at the suggestion of the LURI GOHAIN, who reminded me that at *Sadiya*, I should meet with men equally capable of giving the information, who would exercise no reserve in their communications. At *Sadiya*, however, my unfortunate illness prevented my prosecuting enquiry either on this or on many other points, which I had reserved for greater leisure. With respect to their history, I can only notice here, that the *Khamtis* are supposed to have been in possession of the country from about the same time that *Asam* was conquered by another party of their nation. They are *Shams*, and came from that part bordering on *Yunan* and *Siam*. Whether or not they are, as Mr. KLAPROTH supposes, of *Tartar* origin, I cannot pretend to decide; but if they be, the period of their migration into the *Sham* provinces must be very remote, since

all traces of their original language have been lost. Here they are insulated as a people: a very extensive district, inhabited by *Singfo* tribes, intervening between them and the nearest place where the *Sham** language is known. They informed me that, according to their traditions, the country, at the time of their arrival, was occupied by *Lamas*, and the *Khaphok* tribe; however, I could discover no similarity between the languages of any of the tribes of the immediate neighbourhood and that of the *Thibetians;* and it is difficult to imagine that, if intercourse ever existed with *Thibet*, it should have been entirely dropped, or that the barbarian *Míshmís* should ever have been suffered to become the only channel of communication with the parent country.

The *Múlúks* have already been mentioned as having a peculiar language. The mass of the labouring population is of the *Khaphok* tribe, whose dialect is closely allied to the *Singfo*, yet sufficiently different to cause embarrassment to both parties in holding converse. In the language of the *Khanúng*, who inhabit the mountains to the N. E. and E., a few words are found resembling the *Singfo*, but it may be pronounced a distinct language. That of the *Khalang* tribe, whose villages on the *Namlang*, subject to *Manché*, will be spoken of hereafter, resembles the *Singfo* more nearly, as also does that of the *Nogmún* tribe, who are on *Nam Disang*. But none of these dialects are at all allied to the *Sham* or *Khamti*. This small tract, perhaps, affords an unparalleled instance of seven dialects being spoken at villages remote from each other, only one day's journey, which differ so much that the inhabitant of one would not be understood at the other. The difficulty which would arise, is got over by their all acquiring a sufficient knowledge of the *Khamti*.

---

* It may be proper to observe, that according to the LURI GOHAIN, the *Khamtis* speak precisely the same language *(Shams)* with the *Shams* of *Múnghhúng*, or those from beyond the *Irawadi*. It has not yet been ascertained, whether the *Siamese* language differs in any respect from theirs, or is materially the same.

The only important Geographical information obtained, was relative to the course of the *Irawadi* to *Bhammo*, and the large eastern branch falling in at about two days' journey above where the road turns off to *Múngkhúng*. This river had hitherto been a stumbling block in reconciling the accounts of the *Singfos* and *Burmans*. The latter appear generally to be unacquainted with it, which is to be accounted for simply by their turning off towards *Mognon*, having the *Irawadi* at some distance on their right; the *Singfos*, on the contrary, know nothing of the river below them, and their route towards *Asam* enters the *Húkúng* valley from the eastward.

Of the existence of the *Súhmaï Kha*, *Pongmaï*, or *Sinmaï Kha*, (for by all these names it is known) there could be no doubt after the distinct reports of the *Singfo* Ambassadors, mentioned in an early part of this Memoir: the difficulty was to ascertain where it joins the *Irawadi*. The required information was now most satisfactorily obtained from CHOW NAN, the son of the last ruling *Khamti* Prince, and it was fully corroborated by a *Kháku Singfo* of my party, who had resided many years in that quarter, and some in *Yunan*. CHOW NAN had been twice by the route of the river to *Amerapura*, where he had remained several months in the character of Envoy, or perhaps of hostage. They gave me a skeleton map, showing the principal streams falling into the *Irawadi*, on the east bank, and the number of days' journey between each from *Manché* to *Bhammo*. They are of opinion, that the *Shúmaï Kha* rises in the northern mountains, at no great distance eastward from the heads of the *Irawadi*, but had no positive information. It is to be remarked, however, that the *Lou Kyang*, bordering *Yunan* on the W., makes it impossible, according to the maps of the Jesuits, that the *Shúmaï* can come from *China*. And the objections to assigning it a very distant source are, first, its want of magnitude, for it is not described as larger than the *Khamti* branch; the direction of the high range which would

require it to break through the most elevated ground in that quarter, and, in fact, the want of room.

Curiosity led us to be present at one of the weekly markets, which are regularly held on the plain outside the gate of the Stockade, and we were much pleased at the orderly manner in which the business was conducted, without any of the haggling and din of a bazar in *Hindustan*. We found two hundred or three hundred buyers and sellers assembled in a crowd, but separated into groups, for the sale of each particular article, so that a buyer could readily take his choice from all of the kind exposed. The currency of the country is the thin iron *da*, manufactured by the *Khanungs:* for some of these each comer exchanges his uncoined silver, weighing it carefully in little scales which he brings with him, and the *das* he again exchanges for the articles required. We observed for sale, dried fish, salt, fowls, eggs, pigs, ginger, onions, tobacco, lead, *das* manufactured from the former kind for use, and some few things more. The salt was of good quality, but excessively dear—about half a seer for a rupee's weight of silver.

On the 25th May, I paid a visit to the *Bura Raja*, to talk of our return, and was instantly promised a supply of rice and whatever else they could furnish for our journey. He smiled at my offer of payment, and answered, that he should be heartily ashamed to accept an equivalent for such trifles. His good will did not lead him to oblige so readily in another affair which we had to discuss with him. We had been given to understand, principally by our young friend, CHOW NAN, that the upper road to the *Phúngan* pass would be far preferable for us on the return, as it would save at least two days' journey, by avoiding the deep bend of the *Namlang* to the south, and present no more difficulty than the one we came, excepting that the trouble would have to be incurred again of opening a path through the jungles of the low ground, but that would be

fully compensated for by our ascending sooner out of the region of rank jungles and close underwood. The old man, when this was mentioned to him, allowed without hesitation, that the upper route is by far the best, and said he could not oppose our going that way if we were determined to do so, but he very earnestly requested that we would not, as he was anxious to prevent the *Singfos* from becoming acquainted with it, and indeed our own followers also, who might become competent guides to their more mischievously inclined neighbours. He said he both feared and hated the *Singfos;* and those of our party, were they not under our protection, should not return through any part of his country. To *Singfos,* he already owed the loss of the *Aleth* people on the *Namlang*, and it was because his *Khálang* villages are so near the foot of the pass on the upper route, that he felt so much anxiety at the present moment to keep that shut up, and if there were to be any intercourse with *Asam,* to make the high road the way we came. We had to state what appeared a satisfactory answer to his objections. That our own guides (and many more) were well acquainted with the forbidden path, and consequently that our travelling in it would scarcely affect the question. We had a sort of horror in recollecting the leeches, the *dámdúms,* and the mud and jungles of the *Phúngan;* but we promised to respect the wishes of the good old *Raja,* if he continued to hold the same opinion.

It is a singular custom amongst the *Khamtis,* that the principal amusement of their Chiefs is working in metals, in which practice renders them infinitely more skilful than the lower classes, who, perhaps, cannot spare much time from their labors in the field. Amongst the specimens shown us of their art, we saw a well-fashioned musket lock. Another, was a massive pipe-bowl of brass, which had griffins for supporters, very boldly designed. Both of these were executed by the *Bura Raja's* brother. Their ordinary silver pipes are of very neat workmanship. They were very curious about any little mechanical apparatus that

we had with us, and astonishingly apt in understanding it. At their desire, I opened the lock of my sextant box, and drew for them figures of its various parts, from which they assured me they should be able to imitate it. I also opened and explained to them the uses and connexion of the separate pieces of a musical snuff box, which I intended for a present to the *Raja*. They were highly delighted with it, but they expressed their fear that they scarcely understood it well enough, upon so hasty an explanation and inspection, to enable them, in my absence, to detect the cause of derangement, should it get out of order. I also gave a pair of Magnetic bars, which had excited their attention; not more by their property of giving direction to needles, than that of assisting in the detection of iron ores, which I exhibited to them by driving off the sulphur from some pyrites, the nature of which they had been ignorant of till then. They expressed great delight when I showed them that sulphur, for which they paid a very high price to petty *Singfo* traders, could be readily obtained, at small cost, in their own country. They immediately brought me the Galena, from which the *Khanúngs*, by a process which they kept secret from them, procure the silver, and they asked me for an explanation of this enigma, but it was too late to get cupels made, and I failed, from exhaustion, in attempting to oxidate it with nitre; before the blowpipe, however, I gave them such instruction as I could. They promised to manufacture a still, after my projected improvements, and as they are fond of their whisky, I dare say they will. It is rather singular, that their still resembles very closely the one described by TURNER, as common in *Bhotan*; it consists of a boiler, cut out of the soap stone, with a cylinder of the same material closely fitting on, and having iron bars at its bottom to sustain a small *China* bason. The top of the cylinder is closed by a concave dish of brass or copper, which is kept filled with cool water, that the ascending vapour being condensed upon it may trickle down towards the centre, and drop into the bason, which is placed there to receive it.

After the departure of Lieutenant BURLTON to *Kumtang*, whither he had removed to avoid the heat and inconvenience of the crowd, which aggravated his fever, I received a message from the *Bura Raja* to entreat me to comply with the wishes of the *Múnglang* people, who had arrived from their villages at *Námlang Múkh*, and were pressing him to use his interest with me to persuade me to visit them. Not understanding the cause of his anxiety, I went over, and learned that they had threatened him with complaints to the *Burmans*, and not he alone, but all those assembled, prayed me to avert the evil which might ensue, by gratifying these people. I in vain urged the length of journey we had to perform, and necessity of not delaying our departure, but thinking their motive might be a more interested one than that of giving their people an opportunity of seeing me, and themselves enjoying the pleasure of paying me attention, I tried the experiment of making a present, and found their eagerness immediately lessened. The *Raja* hinted his wish, that I would give them all I could spare. They soon after took their departure, and then instantly I saw some tablets produced, and the old gentleman and his council, with better recollection than I should have expected, made a list of my present, including every item. This, it was explained to me, was intended as a record to enable them, in case of the Chiefs of *Múnglang* accusing them to the *Burmans*, to shew that they also had been equal sharers in whatever had been given by us. The *Raja* afterwards candidly confessed, that he was anxious for our departure, and that it was at first his wish to furnish us with rice, and request us to return from the *Múlúk* villages, which he would have done, but for consideration for his relatives, the *Sadiya* and *Laong Gohaíns*, whom he might have subjected to our displeasure by such an act. He was under great apprehension that the *Burmans*, when informed of our visit, would suspect him of having invited us over, in order to arrange for the removal of the *Khamtis* into our own territories. I was happy to find that he no longer objected to our returning by the upper route.

According to promise, a specimen of the tea-tree was brought to me from one of the neighbouring low hills, it was a full grown one, that is, about five feet high; the leaves were coarse and large, and not numerous. Their mode of preserving it is to drive the leaves when fresh, by strong pressure, into a bamboo, and some salt, I think, was added. Several presents were offered me of things which would have been deemed curious, but I could not accept them, as I had not sufficient means of carrying even those things which were absolutely required.

On taking leave, all our friends accompanied me to some distance from the village, and the *Raja's* brother, called the *Palanseng Gohain*, was deputed to see us properly provided, at the *Moolook* villages, with a store of rice.

I observed on the return, that the hills between the *Irawadi* and *Namlang*, at least those on the road, are of mica slate: at the base, near the *Khokhao* rivulet, I saw some of the blocks of soapstone, which they employ for culinary vessels; it appeared to be *Nacrite*, it is extremely sectile, and is said to bear the strongest heat uninjured.

At *Námbak*, on the 31st May, we, for the first time, had an opportunity of observing some lunar distances, which, however, were not very satisfactory, as clouds interrupted us frequently at the moment, and prevented our getting corresponding altitudes in the afternoon for time, also the latitude of *Námbak*, was obliged to be inferred from that of *Khalang*. Plains, partially cultivated, extend to the *Khalang* villages, and about them there is an extended patch of fine rice fields. There are two villages, each of about twenty houses. The people are short muscular men, dressed in a very inferior style to the *Khamtis*. We were persuaded to halt one day, while a party went forward to cut the path. Of Lieutenant BURLTON's men, who had been left at the first *Múllúk* village, that they might

enjoy as long a rest as possible to cure their sores and swellings, three were still in such a state, that their proceeding with us was out of the question, and one of mine had absconded, so that we were at a considerable difficulty in arranging for the carriage of our small baggage, diminished as it was by the numerous presents given to the *Khamtis*, and were obliged, after a close inspection, to discard the smallest superfluity. As this was the period requiring most attention to their cultivation, we could not induce the *Raja* to give us men on any terms. The ulcers on our own hands and ankles, proceeding from the *dámdúm* and leech bites, would not get well. The former troublesome insect abounds to such a degree at *Khalang*, that it is wonderful the people can endure to live there. There is a very pretty temple situated a few hundred yards from the village, surrounded by a square court yard, which is neatly kept, and is planted with plum, peach, and other fruit trees. The latitude of *Khalang*, by a good observation of S. Urs. Maj. was 27° 32′ 23″.

On the 2d June, at an early hour, we were fairly on our way to return, anxious enough to see our neat built house at *Sadiya*, with such comforts as it afforded, but by no means careless about the dismal journey which was to bring us there. The pretty little valley of the *Nâmlang* soon closed, and where two equal streams, the *Namseya* and *Phúngyún*, meet, and form the first-named river, we entered once more into a ravine of the mountains, where the eye rests on nought but inhospitable jungles, or the foaming torrent. At the point of confluence there is a bridge for the convenience, apparently of the *Mishmí** visitors, whose only route is by the *Namseya*. The bridge is a curiosity for its lightness and seeming instability. Its length is full eighty yards, and it is built of very few canes. The principal strength lies in the bunch of supporters above, on which

* The *Mishmí* route from the *Lathi* on the *Brahmaputra* to *Khalang*.

are threaded the elliptical rings which sustain the road-way, but this is of two canes only, and there are two only on each side to hold by.

The PALANSENG GOHAIN and his people, in the morning of the next day, informed us that we were actually upon the base of the *Phúngan* mountain, and here they left us, warning us that it was very uncertain whether we should find water that day unless we could reach the snow. I followed the example of some others in filling the joint of a bamboo, and suspending it by a cane to my shoulders, and we provided for our dinner, by wrapping up some ready-boiled rice in a plantain leaf. We plodded on up the steep ascent till we were heartily weary, resting but little, and guided in our exertion by our anxiety to reach the spot, where our guides had, on a former occasion, found a small pool,—careless of the advance of our people whom we soon left far behind. In our turn we needed, and found encouragement from the *Singfos*, whose hardiness enabled them to be always in the van, and who very little liked the idea of sleeping supperless. An apple was found on the ascent, of a delightful scent, but astringent to that degree, that it was impossible to bite twice at it. We saw no other novelty. From eight till past three, we continued our toil, and rejoiced to find the pool—it was muddy and filthy, but no matter—it was not dry. But this, with a pot of rice, for which we were indebted to the *Singfos*, and which we knew how to discuss without the aid of spoons, were our only luxuries—fatigue taught us to forget that we had no beds. The elevation of our halting place was eight thousand six hundred and eighty-six feet above the sea.

Many of the people had not arrived when we started again in the morning. We soon left behind us both underwood and forest trees—the only remaining plants were the *rhododendron*, and a bushy ever-green, growing about eighteen inches high, which it was very laborious to push

our way through: we mounted several peaks connected by ridges with the parent height, but from the commanding points, whence we ought to have had an extended view, we looked down on nought but masses of white mist and clouds. Mists also driving like rain, almost always obscured the view of the snows above us. The first snow we passed, was lying in small unconnected patches, but about two o'clock we came to the foot of a sheet which covered the whole apex of the mountain, and found that, since the naked-limbed guides and *Singfos* could not endure sinking up to the knee in it, we had to make a circuit to avoid the deepest bed. The very few trees towards the summit were junipers, but those upon the flat table, which forms the apex, were miserable things of four or five feet in height. According to report, from this elevated peak* the view includes not only the valley of the *Irawadi*, with the plains of *Húkúng* and *Múngkhúng* at an immense distance, but also the *Lama* country to the N.E.; however, far from enjoying these beauties, we only saw the dense mist, which, driven along by a strong wind, wet us to the skin. The guides being deprived of a sight of surrounding objects, became doubtful of the way, and we were detained for an hour trying the descent on all sides, till they agreed that the direction we had first taken must be the right one, and in that we soon found ourselves moving rapidly down towards the south, in a ravine filled with snow, below the crust of which the roaring of the head of the *Phúngan* rivulet was loudly audible. At half-past four, we had cleared the great sheet, and the snow remained only in patches; but our guides giving us no hopes of reaching a halting place having more advantages, we agreed to stay, where there was not a leaf but that of the fir, or rhododendron, to build our huts of—nor wood for fires, but that which was sodden and wet. We had luckily a quilt each and a rug. The rugs we stretched to branches

* The Barometer was set at three or four hundred feet below the summit; it gave the altitude above the sea 12,474 feet.

of the rhododendron, as some shelter from the penetrating mists. The cold, and novelty of their situation, deprived our people of all energy, and with our best exertions of encouragement and threats, we, with difficulty, got a fire lighted. One of our good-natured and willing guides agreed in the morning to go back, lest the traces left should prove insufficient to direct those in the rear, who were yet more numerous than those arrived. One poor fellow was found to have passed the night alone, on the very top—and for the remainder, the precautionary measure of sending back guides seemed to have been fortunate, for they were discovered wandering about the spot where our devious tracks showed that we ourselves had missed the road. At one o'clock there remained in the rear only four men, who were so much fatigued, that there was no chance of their conquering the mountain that day, or of their keeping up with us if they had; and, since the LURI GOHAIN was behind us, having halted another day at *Nâmbak*, we considered that there was nothing to apprehend in leaving them to follow at their convenience. The whole day was excessively cold and unpleasant, the heavy mists and drifting rain continuing without intermission. We would have removed to better quarters, but were informed that no such were within some hours' march.

Leaving the *Phúngan* on the morrow, we mounted the wall on its right bank, and there, while descending the ridge which divides the waters of the *Irawadi* from those of the *Brahmaputra*, a transient clearness gave us a view of our old halting place on the *Dapha*, which we could not perceive without great delight. A short march brought us back into our old path at the crest of the *Phúngan* pass; it ought not to have been fatiguing, as it was generally on the descent, but it became so from the kind of jungle we had to make our way through, or over—for often the boughs of the rhododendron were so closely interwoven, that we stepped from one to another, four and five feet elevated above the ground.

The 'Diamond' of the *Wanglèo* afforded us, as before, water for one meal; we reached it with difficulty in one day from the *Dapha*. Thence also to the *Dihing*, our anxiety to return to a place of rest made us perform the journey (mostly down hill) in one day; but the effects upon us of descending so rapidly from a region of cold to the scorching heats of the low country was so severely felt, that we passed a miserable night on the banks of the *Dihing* without sleep, and Lieutenant BURLTON has preserved a note, that the pulse of one beat one hundred and forty-six, and of the other one hundred and thirty-five, in the minute, while we were in that restless condition.

We crossed the *Dapha*, as before, by the suspension bridge, and there we were informed, to our great satisfaction, that the BÍSA GAM had letters and a parcel for us. I mention this to introduce an instance of *Singfo* duplicity. At *Kasan* we halted an entire day, to send a messenger to BÍSA for our letters, and we rewarded him when, in the evening, he returned with the answer, that, at an appointed place on the *Dihing*, the BÍSA GAM would attend in person to deliver them. There we stopped, and were disappointed; but we afterwards learned that our most worthy messenger had done what many fire-side travellers take the liberty of doing. He was contented with performing the journey while smoking a pipe in his own hut.

The river was pretty full, and the rapids consequently very boisterous; but after descending the first and worst of them, with the precaution of lowering our boats gently down the smoother side, we shot the rest with immense rapidity, and in one day and a half from *Kasan* we landed at *Sadiya*.

Of those who set out with us on the return, all arrived safe; and of those of Lieutenant BURLTON's men who remained, one also found his way back with another party. I am not aware whether they have all returned to their own country.

APPENDIX.

No. I.—ROUTE FROM GOHATI TO MURSING GAON:—See p. 325.

1st day. From *Darang* to *Chatgári* occupies two *pahars*, and the direction is nearly north.

2d. To *Kariyapar*, direction north, two nullahs are crossed, and the road passes through much jungle; this is considered a full day's journey.

3d. In a north-westerly direction to *Gúmgaon*, the road through jungles abounding with wild elephants.

4th. *Amarathal*, within the hills, is reached in two *pahars* with difficulty; the road is through hills on the banks of a nullah, which is repeatedly to be crossed by a bridge of one plank. *Amarathal* is rebuilt every year. The violence of the rains destroys the houses, and renders the roads impassable, and the force of the mountain torrents sweeps away the bridges. Direction north.

5th and 6th. *Bagahgaon* is considered one day's journey, but it was found impossible to reach it on the fifth day, on account of the steepness of a mountain in the road. In this hill there is a cave, in which fifty or sixty men can find room, and here our travellers rested. The remaining part of the distance occupied but a short time the next day. The village is on a hill north of the road, but travellers rest in two or three houses situated below. They build here of stone, and roof with mats. They eat wheat flower, which is prepared by heating and mixing it with water, rice, either boiled or heated with a kind of oil which sells very dear, and *kampa gondi*, the seed of which, a little larger than that of

the poppy, is yellow (the pod black); this is made into a paste with water. Goat's flesh is eaten—but neither that of fowls, hogs, or bullocks. Direction north.

6th and 7th. *Narígaon* was also reached in two stages, though it might be made in one with great difficulty. The halting place is a cavern in the hill. Thus far the road is on the banks of a river, sometimes on the bed of it, sometimes on the hill's side; at *Narígaon* it is left to the south. The village is on a high hill; the direction, during the first day, is north, and, on the second, north-east.

8th and 9th. Thence in a north-easterly direction, to the bend of the nullah above mentioned, the road passes between two mountains, and the dangers and difficulties are many; it is scarcely three feet wide, and is ankle deep in mud in many places; it is made with wood. The stage is not a long one; but owing to the bad state of the road, it is not possible to advance more than two or three kos a day.

The direction, on the second day, is first east, and then due north to *Múrsinggaon*, which is situated on the north bank of the *Bhúrulí* river. Many villages are seen to the south; their food is the same here as above stated, but the rice they use, being brought from *Asam*, is very dear; there is very little cultivation.

10th. Hence two kos, a little north of east, is *Dúmkúgaon*, on a nullah; and two kos again beyond that, the DEB RAJA was found encamped in a garden, on the water's edge. Here and there snow was seen on the mountain, and water flowing from it.

Tawang is three days' journey from the DEB's encampment, and respectable *Tawang* people said that *Súnea-hath* is three days further; thence there are two roads, one towards *Nepal*, the other north to *L'hassa*, under the KULITA RAJA, which is fifteen days' journey. From *L'hassa*, in fifteen days, a province of *China* is reached, either by water or by a land route. The boats used are of leather, on account of the number of rocks met with. At the end of a stage the leather boat is hauled up and dried. By land, it is requisite to carry provisions for the fifteen days, as the hills are not inhabited. There are on the road elephants, rhinoceroses, tigers, and many other animals.

Tawang is said to be in the upper part of the *Bonash*.

No. II.—BOGA DAMRA'S ACCOUNT OF THE FLOOD OF THE DIHONG:—p. 326.

"In 1657, (A. D. 1735) two rivers flowed into our country. There were formerly two *Cachári* villages at the mouth of the *Senglaí* river, near the *Dihong Dipang*. Belonging to these villages were two *bils*, (lakes) the names of which were *Diha Darúa* and *Dibangiya:* the *Senga Senglaí* flowing from the DURIYA GOHAIN'S country into these two *bils*, takes the name of *Dihong Dipang*. The *Senglaí* river flowing from the *Kulita* country joins the *Dibong*. Boats cannot navigate the *Dihong* to the mouth of the *Senglaí* on account of the numerous rocks, but by going forty days up the stream of the *Dibong* it may be reached, and thence to *Kulita* is twelve days' journey. The *Senglaí* is not navigable.

From *Sadiya* to *Kulita* is a journey of forty-two days and six hours, in the middle of the way the route lies through hills, where the dense jungles make it very difficult to proceed.

From the *Abors*, a distance of nine days, are the *Bibors;* from the *Bibors*, a distance of three days are the *Jiobars*. From the *Jiobars*, distant seven days, are the *Barkanas*,—in the whole, the distance occupies, as above, forty-two and a half days to *Kulita*, which is three days' journey beyond the *Barkanas*. There are, on the whole, twenty-four hills and eleven large torrents, besides innumerable small ones; but the passage by the hills is impracticable on account of the hostile disposition of the *Barkanas:** the products of *Kulita* are elephants' teeth, "*búrísar*," copper vessels, *bor bis* and *sengúmúrí bis*, (two kinds of poison) "*Gathiyan*', silk, musk and chowree tails.

North-westward from *Kulita*, distant nine days' journey, is the country of the KIBONG GOHAYN. The *Duriya* country is distant from *Kibong* five days' journey. The *Dihong Dipang* flows from betwixt the countries of *Kibong* and *Duriya*."

---

* *Barkanas*, large-eared—the *Asamese* are as confident of the existence of this tribe as of that of the fabulous *Sri Lohit* and its three branches, (*Brahmaputra*, *Dihong*, and *Irawadi*.) Those who are not remarkably credulous, represent the ear as merely hanging down to the waist, while others are positively informed, that at night the left ear serves as an ample bed to sleep on, with sufficient to spare to wrap the body up in. Lieut. W.

It is curious that this notion should be still in existence, being now as old as the days of *Megasthenes:* it proves also, that he did not invent the fiction, but honestly repeated what he had heard in India.—H. H. W.

No. III.—NOTE ON M. KLAPROTH'S THEORY OF THE COURSE OF THE SANPO.

Since my labors have not terminated so successfully as to furnish absolute proof of the identity or non-identity of the *Sampo* and *Brahmaputra*,* I might leave it to others to form their own opinion upon the data furnished them in the foregoing part of my Memoir; for I do not suppose that many will incline to follow M. KLAPROTH, in claiming infallibility for the *Chinese* authorities quoted by him. However, while stating the few facts which I have yet to mention, I shall embrace the opportunity of pointing out, at the same time, what circumstances have materially contributed to strengthen M. KLAPROTH'S arguments; and on the other hand, I shall endeavor to collect the evidence, (in my opinion very strong,) which, at all events, deserves to be weighed against the assertions of the *Chinese* Geographers.

With respect to the weight to be attached to their opinions, M. KLAPROTH himself says, "ceux d' entre eux qui ecrivent sur la geographie donnent constamment des détails si minutieux qu'on ne peut donter qu' ils ne connoissent pas le plus grand fleuve de leur empire." But since his Mémoire† cannot be had access to by many, it appears in every way advantageous to extract from it here the quotations by which he supports his arguments. He says:—"voici un extrait de la grande géographie imperiale de la Chine qui fera voir que le cours inférior du Yarou-dzang-bo-tchou du Tubet, ou de l' Iraouaddy de l'Ava étoit depuis long-temps connu des Chinois, et qu' ils l'appelloient Tā-kin-cha-kiang. La géographie de la dynastie des Thang l'exprime ainsi:"—il porte aussi le nom de Tsang (ou Dzang); les habitans du pays du Tian (le Yunnan) l'appellent Ta-kin-cha-kiang. Il vient de la partie la plus occidentale du Tubet. Selon la géograqhie du Yunnan, le grand Kin-cha-kiang vient du Tubet, entre dans le pays de Miantian ou Ava, á cinq li de largeur et va se jeter dans la mer. Hoyang-tchu-yuou, ancien anteur Chinois dit.‡ "——On dit que les sources du grand Kin-cha-kiang ne sont pas tres eloignées du pays de Ta-wan (La Bactriane). Depuis les monts Lima et Tehha-chan jusquà l'extrême

* The name Lohita, might perhaps be substituted with advantage when referring to the "*Brahmaputra* of Geographers," since it does not appear that it is properly applied to the Sacred or Eastern Stream.

† "Sur les Sources du *Brahmaputra* et de l'*Iraoaddy*.

‡ I extract what relates to this river only.

frontïere septentrionale de Meng-yang (dans le Yunnan*), ou ne connoît pas bïen son cours: il passe par le pays d'une tribu des sauvages nommés les Cheveux roux (Tchhy-fa); ses bords y sont si escarpés qu' on ne peut pas y grimper. La grande géographie de la Chine, qui cite ce passage, ajonte: Parmi les rivières qui passent par la partie du pays des Meng-yang (I) hérisseé de montagnes et presque inaccessibles, il y en a deux très-grandes qui viennent du nord-ouest, l'une s'appelle Ta-kin-kiang on Ta-khin-kiang, et l'autre Pin-lang-kiang. Elles se réunissent, ét portent aussi le nom de Ta-i-kiang: de nos jours les habitans du district de Theng-yue donnent généralement à toutes les grandes rivières le nom de Ta-i-kiang. Les gens du pays appellent ce fleuve Kin-cha-kiang (à sable d'or). On trouve dans son lit le Yu ou jade oriental, de couleur verte, de l'or en grains et en paillettes, la pierre précieuse appeleē tsing-chy, du noir, du cristal de roche et quelque fois aussis du Yu blanc. Aux pieds des montagnes qu' il traverse, on recueille aussi de l'ambre jaune. Les habitans du Tian (Yun-nan) appellent ce fleuve Ta (grand) Kin-cha-kiang; le Siao (petit) Kin-cha-kiang, an contraire, est celui qui passe à Li-Kiang, &c. En sortant du pays de Meng-yang, ce fleuve coule au sud, passe devant Houang-meng, Ma-than, Mo-tsy et Meng-tchung, ou il recoit une rivière qui vient de l' ouest: il baigne Pho-pha, Tsimeng et Momang, villes anciennes, coupe la frontiére (de ce temps), et va à Man mo.—Il n'y a aucun doute que ce fleuve ne soit le Yarou-dzang bou du Tubet ajontent les éditeurs de la grande géographie impériale."

The quotation from Houang-tchin-yuau ancien auteur Chinois is an on dit,—but what does it assert more than that between two distant points, one situated in Thibet, the other on the borders of Yunnan—the course of certain rivers is unknown. The onus probandi still lies with Houng-tchin-yuan, to show that the river lost sight of in Thibet, is found again near Yunnan†.

La Geographie de Yunnan cited proves no more, nor does the first quotation, as they seem all to rest upon the same grounds, and I need scarcely remark that the addition of

---

* A note is given by M. Klaproth (1) and it does not appear whether (" dans le Yunnan") is his addition or not " (1) Ce pays étoit situé en dehors de la frontière la plus occidentale au Yunnan actuale.

† The *Chinese* geographers seem to have been in precisely the same predicament with ourselves in respect to this river. They lose sight of the *Sampo*, so do we; they find a large river near their own borders, we find a larger; and we each declare that we have found that which was lost. The case is very similar also to the dispute between Mr. McQueen and the Quarterly Review, on the question of the *Niger*. One finds a proper and reasonable outlet for it, which would give it an allowable length of course; the others are not (or were not) so easily satisfied, but conveyed their river circuitously about, contrary to all reason.

the Editéurs de la Grande Geographie, 'Il n'ya aucun donte,' induces a very great deal of doubt, as it appears that they draw their conclusion from the scanty evidence they place before us. The account, however, of the *Ta-kin* and *Pin-lang*, is of a very different stamp, and in it we recognise an accurate description of the *Irawadi*, as it really exists. To this day, there is a considerable trade carried on by the *Chinese* of *Yunan*, chiefly for the sake of the articles enumerated above, as found in these rivers. The amber mines of the *Kayńduayn* have been long famed for the quantities of amber produced. The green stone *(yu)* is found in most of the branches of the *Irawadi*—(I brought a specimen from *Manché*, which was found in the *Phungan*)—and the *Úrú* produces a stone, the nature of which we could not exactly ascertain from the *Shams*, for which the *Chinese* pay a large price*. It is to be remarked, that hitherto it has not been asserted that the river of *Thibet* enters *Yunan*; but to prove this, M. KLAPROTH cites "une ordonnance de Khang-hi," published in 1721. I give the extract relating to this river at large.

"Il y a encore une autre riviere qui passe par l'extreme frontière du Yun-nan, c'est le Pin-lang-kiang (fleuve de l'Arec). Sa source est dans le Nyari province du Tubet, à l'est du mont Gangdis sur le mont Dumdjoûk-kabal, c'est à dire bouche de cheval. Ce fleuve recoit plus bas le nom de Yarou-dzangbo; il coule généralement vers l'est, en déviant un peu au sud; passe par le pays de Dzangghe et la ville de Jïkar gounggar; recoit le Guldjao-mouren; plus loin, se dirige au sud, traverse une contrée habitée par des hordes non soumises, et entre dans le Yunnan, près de l'ancienne ville de Youngtcheou; il y porte le non de Pin-lang-kiang. Il quitte cette province au fort de Thie-pykouan et entre dans le royaume de Mian-tian."

I have already mentioned that this *ordonnance* was published in 1721; however, the Jesuits were employed in *Yunan*, in constructing their map of the province in 1714 and 1715, and they have neither introduced the *Sampo* into *Yunan*, nor had their inquiries elicited any satisfactory information concerning its course after leaving *Thibet*. P. REGIS himself says, (he probably wrote after the year 1721,) †"Mais, ou va se decharger le grande fleuve Tsanpou? C'est sur quoi on n'a riea de certain. Il est vraisemblable

* One species of stone they require to be sawn in two, when they immediately decide to reject it as worthless, or to pay a large sum for it.

† Description de l'Empire de la Chine.—p. 585.

qu'il coule vers le golphe de Bangale car du moins on scait surement que des limites du Thibet il va Sud—oüest à la mer, et que par consequent il coule vers Aracan, ou pres de l'embouchure du Gange dans le Mogul."

That the Jesuits visited the *extreme* frontier, we have evidence in their table of *observed* latitudes, in which we find *Loughan-kouan,* which is in the *extreme S. W.*, "Lat. 23° 41′ 40″," "Long. 18° 32′ 00″," (west of *Pekin).* *San-ta-fou* is not included in this table; but we may infer, from their informing us that its position is the result of several triangles, that they were within sight of it, if not at the place; still, however, between *San-ta-fou* and *Teng-ye-chew,* distant from each other about forty-two miles only, and of which the position of the last was *observed* (both latitude and longitude*), does M. KLAPROTH venture to introduce this immense stream, which, in the words of le P. "GAUBIL, is beaucoup plus considerable que le Houaug-ho et le grand Kiang"—"C'est la plus grande riviere que les Chinois connoissent."

It is the more unfavourable to M. KLAPROTH'S theory and argument, that he has adopted the *Bhanmo* river as the channel for the *Pin-lang-Kiang,* for we have such easily accessible proof that it is but a rivulet. Perhaps M. KLAPROTH had not seen Dr. HAMILTON'S interesting accounts of the maps procured by him at *Amerapura:* he would have observed† that the *(Burmans) Mranmas* distinguish the *Banmo* river as a *Khiaun,* or small river, in contradiction to *Myeet,* which is their term for a large one. The *Chinese* word *Aho,* (which is applied by them to the *Banmo* rivulet,) has the same signification, according to Dr. HAMILTON.‡ I have long been aware, from the accounts of *Mranmas, Shams,* and also of the *Chinese* from *Yunnan,* mentioned in p. 350 of this Memoir, that the *Banmo* river is one of very small size. But I can venture to assert roundly what is more to the purpose. I rest upon the same authorities, and I have examined, at various times, at least a dozen men of the nations mentioned, besides *Singfos,* who are in the habit of visiting the western part of *Yunnan;* that below the mouth of the *Múnkhúng* river, which I place in latitude 24° 52′, the *Irawadi* § does not either enter or proceed from *Yunnan.*

---

* They therefore remained at *Teng-ye-chew* some time.

† "Account of a Map of the Route between *Tartary* and *Amarapura.*"—*Edinburgh Phil. Journal,* p. 35.

‡ Ditto—page 36.

§ The *Irawadi* of Geographers—*i. e.* the principal stream.

Though perfectly satisfied on this point from having been so long and so often engaged in the inquiry, I have recently questioned a *Burmàn* attendant, who has been with me since the capture of *Rangpur*, and who came from *Amerapura*, his native city, by the route of the *Irawadi*, striking off where the *Mogaun*, or *Múngkhung* rivulet joins the great river. This man,* in answer to my simple question as to the size of the *Bhánmo* river, immediately replied—as large as the *Dikho*, (the little stream running past *Ghergong*, and *Rangpur* in *Asam*,) and he positively denies that any *river* joins the *Irawadi*, as far up as he has seen it.

"I was assured by the Officer who gave me the account of the Map here published, and who, as belonging to *Panmo*, on the frontier of *China*, must have been perfectly well informed, that the *Irawadi*† or *Kiang nga* never enters the province of *Yunnan*, but keeps far to the west of it, the whole principality of *Panmo* being interposed." (HAMILTON, p. 36 of his Account.)

In answer to this, M. KLAPROTH could not again remind us that though this may be true of the *Irawadi* of the *Mranmas*, it may not be so of the "*Irawadi* of Geographers;" he would be well aware that the latter was understood and intended by Dr. HAMILTON, who perfectly well recollected the story of the four *Chinese* of the Universal History. I do not think it worth while to enter on a discussion of their travels.‡ HAMILTON has said enough on the subject; but indeed it appears to me that citing such authority, or the "renseignemens authentiques" of our great Geographer RENNELL, is wilfully recurring for information to a period when much of what is now perfectly understood was the subject of mere conjecture.

I was assured by a party of *Shams* from *Yunnan*, that there is no river to compare with the *Sadiya Brahmaputra*, within thirteen days' journey of *Banmo*. The river alluded to by them at that distance, appears to be the *Lan-tsan*, or *Kianlong-kiang*. The *Nou-kyang* is, as we are told by HAMILTON, much inferior to the *Irawadi* at *Bhanmo*,

* He has often shown considerable intelligence in geographical matters.

† It must not be forgotten, that while Dr. HAMILTON was pursuing these inquiries at *Amerapura*, there were there some *Chinese* Ambassadors from *Yunnan*, who also gave him information.

‡ They might have embarked on the *Bhanmo* river.

which is described to me as larger than the *Sadiya Brahmaputra*, but inferior to the great united stream of the *Lohit*.

If it were incumbent on me to mention every statement with which M. KLAPROTH has thought to strengthen his arguments, I should have to quote P. GAUBIL'S (mere) opinion, that M. D'ANVILLE was right in placing *Ava* on the great *Yarou Ssanpou*—(he does not say a word about its entering *Yunnan*)—and the evidence of the maps published during the reign of KHIAN-LONG, on which it is written in *Manchou** characters, opposite to where the *Dzangbo-tchou* or *Yarou Dzang-bou-tchon* leaves *Thibet*, that this river passes through the country of *Lokabadja* (or *H'Lokba*), and enters *Yunnan*; but, as I have proved satisfactorily, I hope, that so important an error has been committed on this point, surely that whole mass of evidence will no longer be thought trustworthy.

However, in justice to M. KLAPROTH, I must draw attention to the large eastern branch of the *Irawadi*, called in my map by its *Singfo* name, *Shúmaí kha* †—I ask, had M. KLAPROTH been aware of the existence of this considerable river, should we ever have heard of the *Pin-lang-kiang* in *Yunnan*? or seen the petty *Banmo* rivulet magnified into a mighty stream? I think not; and those who inspect my map will agree with me. With regard to the origin of the *Shúmaí kha*, I have no positive statements to offer; the *Singfos* are generally of opinion that it is something larger than the western branch, though not materially, and it seems not at all improbable that it is the river mentioned by the old man who was captive amongst the *Lamas*, as rising in the snowy mountains of the *Khana Deba's* country, and flowing to the south near where he saw the source of the eastern branch of the *Dihong* turning to the N. W.‡

If the opinion of *Mandchous* and *Chinese* be deserving of confidence, is not that of the *Thibetians* resident upon the *Sanpo* equally so?

---

* These maps have led M. KLAPROTH into an error, acknowledged by himself—for he corrects it in his second map. It is written similarly in *Mandchou*, opposite the "*Moun-tchou*," that it unites with the *Yaron Dzangbo* in *Lokabadja*. M. KLAPROTH *now* considers it to be our *Dihong*.

† The *Lúphaí Singfos*; it is also called *Sinmaí-kha*.

‡ Vide p. 411 of this Memoir.

A party of *Bhotiya* and *L'hassa* merchants, one of whom had travelled from *Lassa* to *Pekin*, assured Mr. SCOTT at *Darang*, in *Asam*, (in 1826), that the *Brahmaputra*, on the banks of which they then stood, is the *Tsanpo*, or large river of *Thibet*. From *Nipal*, we understand, that the *Thibetians* always assert the same thing, and referring to TURNER for the opinions he derived from them at *Teshoo Lomboo*, we find a degree of accuracy in their idea of the river, which was not to be expected.

"It passes *Lassa*, and penetrates the frontier mountains that divide *Thibet* from *Asam*. In this latter region it receives a copious supply from the sacred fountains of the *Brahmakoohd*,* before it rushes to the notice of Europeans below *Rungamutty*."

The evidence derived indirectly from the *Thibetans* at the sources of the *Brahmaputra*, has already been recorded, p. 410 of this Memoir, and this, as I have there observed, deserves consideration more particularly, since those people must be perfectly aware whether or not they are divided from the rest of *Thibet* by a large river. However, they not only deny the existence of such river, but inform us positively that the *L'hassa* river is the same as the *Dihong*.

I shall proceed to examine how far M. KLAPROTH derives advantage by supporting his view with arguments from Physical Geography.

He concludes that the great periodical rise of the *Irawadi*, and its rapidity of current, can only be accounted for by assigning it a distant source in the snows of *Thibet*.†

---

* We had not at that time any notice of the *Kund*.

† He refers us to "Two years in *Ava*, p. 233." The Author of that clever little work hazards the opinion that the *sudden* "risings of the river are attributable to the melting of the snow, in the mountains of *Thibet:* for although the *Irawadi* derives a vast supply of water from the numerous streams which flow from the *Yomadoung* and other mountains, yet it is impossible they could be *so rapidly* swollen by the rain as to create this sudden increase of water." Surely a sudden increase is more likely to proceed from rain than from the *gradual* melting of snow. This Author further inform us, that the periodical risings are generally three in number in one season, and that the last is the forerunner of the river's ebbing to its lowest state. BUCHANAN says, that it began to fall on the 17th September. Then the last sudden rise occurs at a period when we know that the snows suffer very little further diminution. After the rapid thaws of May and June, there remains no great portion of the mass of snow which is situated within reach of the sun's influence.

I shall show, on the other hand, that analogy furnishes us with the conclusion that within the limits prescibed by my researches to the sources of the *Irawadi*, there is sufficient space for the formation of a river of great magnitude, and the question will then appear to hinge upon this point. What is the magnitude of this river compared with others.*

We have certainly been told that, in the rainy season, it would be impossible to make way against its impetuous current, were it not for the strong southerly breezes which then prevail; but to those who are acquainted with the *Ganges* and *Brahmaputra*,† this is saying no more than that it resembles those rivers in the periodical difficulties of its navigation: and when we further recollect that the *Irawadi* is, in one place, contracted in breadth by its high banks to four hundred yards ‡ (of which we have no similar instance in the others §) we cannot consent to allow that the difficulty of stemming its current is a convincing argument of its *superior* importance.

"During the dry months of January, February, March, and April, the waters of the *Irawadi* subside into a stream that is barely navigable: frequent shoals and banks of sand retard boats of burthen."‖ "I see here," says Dr. BUCHANAN in his Journal, "some boats poled along in the very middle of the river, where there does not appear to be more than six or eight feet water: It is deeper, however, towards the steep bank." Dr. HAMILTON¶ says of it generally, that it is equal to the *Ganges* or *Brahmaputra*, and I am not aware that any one has rated it higher, but Officers, whom I have questioned on the subject, who had sufficient opportunity of forming a judgment during their long sojourn on its banks, in the course of the late war, compare the *Irawadi*, above its junction

---

* It is to be regretted that those who had the opportunity did not give us a section of the *Irawadi*, and the velocity of its current.

† The latter particularly.

‡ Two years in Ava.

§ Immediately below *Gohati*, hills confine the *Brahmaputra* to the breadth of one thousand two hundred yards, the narrowest in its course through *Asam*; there, in the rainy season, boats are necessitated to be moored till a westerly breeze springs up of force sufficient to carry them through the narrow strait: but there is often great difficulty even where the river flows in an open bed. When coming down the river in the latter end of October 1825, I saw a fleet of Commissariat boats (at that time very much required with their supplies for the army) which had been twenty-five days between *Goalpara* and *Naghurbera* hill, a distance of thirty miles, and there was no remarkable wind to impede their progress.

‖ Symes' Embassy, p. 24, ed. of 1800.

¶ Vol. 3, Edinburgh Philosophical Journal, p. 37.

with the *Kenduayn* to the *Ganges* opposite *Futtehghur*, and consider it generally as very inferior to the *Ganges*, where having received its vast supplies from the *Goygra* and the *Soan*, it spreads its great breadth over the plains like some great inland sea.*

But I am not anxious to deny high rank to the *Irawadi*. I am only jealous of its taking precedence, without authority, of its noble compeers.

I may assume, I believe, that the magnitude† of the rivers of similar countries bears always some proportion to the space‡ drained, so that knowing the extent of country, an estimate might always be formed of the comparative magnitude of its rivers: provided, however, that the similarity of the districts compared, extend to the climate as well as other physical features.

For comparison with the district drained by the *Irawadi*, particularly on the upper part of its course, no country could be more happily selected than *Asam*, similar to it, as far as we are informed, in every particular. The elevation not materially differing, the rains commencing at the same season and equally abundant, the same large proportion of hill tract to plain country, and high mountain ranges, supplying in each the distant sources of their larger streams.

Asam, with its bordering districts, including from the meridian 90° 30′ of longitude on the west, to the heads of the sacred *Brahmaputra* on the east, and from the crest of

---

* This evidence would carry greater weight were I at liberty to name my authority. I would not rest much, however, on what must necessarily be so vague as any person's opinion of the comparative magnitude of rivers when formed without sufficient data.

† Limiting the sense of magnitude to the more legitimate one as applied to rivers.

‡ It does not appear of much importance whether the extent drained be considered, or the actual lengths of the courses of the rivers, as it will be found that these bear a near proportion to each other; for instance, the *Ganges*, down to *Allahabad*, drains 7·9 square degrees; the *Jumna* to the same point, drains 27·1 square degrees; the proportion is 1 to 3·43. The sum of the lengths of the rivers forming the *Ganges* to *Allahabad*, is two thousand three hundred and fifty miles, and of the *Jumna*, ten thousand and seventy, which give the proportion 1 to 4·28. It is not pretended that these measures are *accurate*. They were made on CARY's large map, and another on a larger scale, would exhibit more water-courses. For the number of rivers introduced in a map, much must depend on the mode of survey, whether detailed or not; in this, probably, the central districts watered by the contributors to the *Jumna* have the advantage.

the *Himalaya* ranges,* (which generally deviate between the 28° and 29° parallels of latitude,) on the north to the line, (which can be traced without the hazard of much error) separating on the south the sources of the rivers contributing to the *Brahmaputra* within these limits, from those flowing in the opposite direction, is an extent of about 15·3 square degrees.

The *Irawadi*, according to my map, drains up to the City of *Amerapura*, 13·9 square degrees, excluding, of course, in this estimation, the whole tract whence the *Kaynduayn* draws its supplies.

Then, were the *Sanpo* supposed to contribute to neither of these rivers, it would be fair to compare the *Brahmaputra* at *Goalpara*, with the *Irawadi* at *Amerapura*:—but who will venture to do this? Add, in imagination, the *Sanpo* to the *Irawadi*, and then by how large a quantity† ought the *Irawadi* at *Amerapura* to exceed the *Brahmaputra* at *Goalpara*—but who of those who have seen the two rivers, shall we find willing to grant the possibility of such excess, or who will not indeed assert the reverse as the fact.

We can easily estimate the quantity of water drawn by the *Brahmaputra* from the tract within the limits mentioned, since we know the entire discharge at *Goalpara*, and also the discharge of the *Dihong*, the *Dibong*, and the *Brahmaputra*, separately in the neighbourhood of *Sadiya*.

In January 1828, the quantity of water discharged by the *Brahmaputra* at *Goalpara*, including the *Bonash*, was, per second, ...Cubic feet, 1,46,188.‡

---

* *Thibet* and the *Sanpo* altogether excluded.

† The quantity to be added is not so great as might without consideration be anticipated. It must be recollected how small a quantity of rain falls in the elevated region of *Thibet*. We are informed that in parts of that country, neither rain nor snow are known to fall, and that some mountains, of the great elevation of thirteen thousand feet (seventeen thousand ?) are never covered with snow.

‡ An account has been given of the manner of taking this Section, and of computing the discharge.

Brought forward, ... 1,46,188

Captain BEDFORD gives the discharge of the *Dihong*, at the same season of the year, fifty-six thousand five hundred and sixty-four feet, but the small rivulet, called the *Lali*, is here included, say 56,000

Remain ....Cubic feet, 90,188

Here then is proof, in an instance of the fact, that in a country (and climate) similar to *Asam*,* of the extent of 15·3 square degrees, a river of such importance as one discharging, when at the lowest ebb, ninety thousand cubic feet per second, may have its origin.

RENNELL has stated the entire discharge of the *Ganges*, in the dry season, at eighty thousand cubic feet; but he has perhaps overrated it since the quantity of water flowing past the City of *Benares* in April last, was found to be no more than sixteen thousand†, or seventeen thousand feet per second.

But the whole extent drained by the *Irawadi*, including its several contributors down to the head of the Delta, or to the point where it remains an undivided stream, is thirty-three square degrees: it follows that, without claiming a larger space for the origin of the *Irawadi* than what appears due to it from the result of my researches, the probability is in favor of its discharging in the vicinity of *Prome*, in the dry season, upwards of one lack and eighty thousand cubic feet per second, or that it is there larger by one-fourth than the *Brahmaputra* at *Goalpara*.

I regret that I want data for continuing the comparison through the rainy season. The only fact that I can state, connected with a rise in the *Brahmaputra*, is, that on the 2d May, 1825, when a considerable extent of its sands yet remained uncovered, it discharged three lacks and seventy-five thousand cubic feet per second, above the mouth of the *Dikho* river, to which must be added (say) forty thousand feet, for the *Bori Lohit*, which separates from the main stream a few miles up the river.

The objection has been made that the *Sanpo*, where it is lost in *Thibet*, is necessarily a very large river, and on the other hand, that the *Dihong*, where I last saw it within the

* And the contiguous territories.

† For this information, I am indebted to the kindness of J. PRINSEP, Esq.

mountains, is too small to be the channel of such a stream. The first part of this objection has been answered in a foregoing note, but much more might be adduced to *prove* that a river having its rise in and flowing through that arid and elevated tract, must be very inferior in comparison with one draining a country with a moist climate; but, indeed, the *Sanpo*, up to the ninety-seventh degree of longitude, drains a smaller space than the *Ganges* to *Benares*, the former being 33·8 degrees* and the latter 37·0 degrees, yet it is considerably larger. The second objection has also been met in a note to a former part of this paper. True, the *Dihong* was but one hundred yards† wide, yet the steep slope of the mountain's sides induced an impression that the bed must possess immense depth: but pursue the question to calculation, and all appearance of difficulty vanishes. Suppose the discharge still fifty thousand feet per second, and the mean velocity of the current at that spot three miles per hour, the mean depth required to give that discharge is but thirty-seven feet—the *mean* depth in the dry season at *Goalpara*, where the breadth is twelve hundred yards, is twenty-one feet, and the depth of the principal channel there thirty-three feet. And supposing the discharge the same, and the velocity no more than two miles an hour, the mean depth required is but fifty-five feet: also, I conceive, far within the bounds of possibility.

It must not be forgotten, that to connect the *Sanpo* with the *Irawadi*, according to M. KLAPROTH'S view, not less than four hundred and fifty miles (by the most direct possible route) must be added to the course of the *Sanpo*, over and above what is necessary to connect it with the *Dihong*. This is not his only difficulty: in addition to those I have already stated; his second map still requires considerable alterations in longitude to bring in my Surveys, cramping still more the crowded streams, which, with most unnatural parallelism, crawl in nearer contiguity than is known in any other part of the world, through his map, between the sources of the *Brahmaputra* and *China*.

Notice has already been taken, in an excellent article ‡ on the subject, in the Oriental Quarterly Magazine, that M. KLAPROTH was entirely mistaken in supposing that TURNER

* Including from the highest ridge of the *Himalaya* to the thirty-first degree of latitude, sometimes a little more. M. KLAPROTH'S map would give it less space.

† The breadth is said to be greater further within the hills. I have seen a cane bridge, of eighty yards length, over the *Brahmaputra*. The *Abors* declare that the *Dihong* is always too wide to admit of a bridge being thrown over.

‡ Memoir on the Course of the Great River of *Thibet*.

did not take any astronomical observations for the position of *Shigatze* or *Teshu Lombu*, and of the consequent error which he has probably committed in altering the latitude of *Lassa* one degree*. The whole of the lower part of the *Sanpo*, from *Lassa* eastward, suffers a similar alteration in his map, which has given room (in space) for the formation of a considerable river, called by M. KLAPROTH, *Mon Chu*, evidently the *Om Chu* of RENNELL, and our *Subanshiri*, though M. KLAPROTH now considers it to be our *Dihong*. This river has not, however, so much as six square degrees allotted to it; but if the course of the *Sanpo* be restored to its former parallel of latitude, and the *Subanshiri* introduced—no insignificant river, since it discharges, in the dry season, sixteen thousand feet per second—the space for the growth of the *Dihong* will be, in M. KLAPROTH'S map, most sadly curtailed—reduced, indeed, to nothing.

I think that I have hinted at the probable cause of all the discussion which we have had on this subject in the early part of this Memoir. The *Brahmaputra* was described to us as a diminished stream, "little more than a hill torrent," and it "seemed very improbable, that such a small-body of water could run the distance it is represented or supposed to do." The *Dihong*, in which alone we could look for a continuation of the *Sánpo*,† was totally lost sight of,‡ and long remained forgotten. Time was given to originate Theories,§ and to search for Geographical anecdotes amongst antiquated *Chinese documents*, and the delay which occurred in furnishing information from hence, (from the spot) allowed conjecture to grow into certainty.

---

* The *Lamas* who were sent to survey *Thibet*, were mathematicians, instructed for the purpose: It is hardly possible that they can have erred one degree of latitude in their survey of the short distance between *Lassa* and *Teshu Lombu*, (about one hundred and fifty miles) and their position of the latter agrees closely with that given by TURNER, from observation. I would not contend for their *extreme* accuracy, or even for an approximation to accuracy, excepting in the position of places actually in their route. They seem to have possessed very little judgment.

† This would have appeared from the first, had Lieutenant BURLTON's account of the discharge of the rivers been published.

‡ It was never adverted to as a river of great importance, till a letter of mine to the Editor, appeared in the Government Gazette, about January 1826.

§ Captain MCLACHLAN's "Theory" appeared in the Edinburgh Philosophical Journal.

V.

CENSUS
OF THE
POPULATION OF THE CITY OF BENARES.

By JAMES PRINSEP, Esq. F. R. S.

In the year 1800, a Census of the Population of this City was taken by Zulficar Ali, Kotwal, under the orders of the Resident, Mr. Deane, which was published as an Appendix in Lord Valentia's Travels in India.

Benares was there stated to contain about thirty thousand houses and six hundred thousand inhabitants; but very little examination of the data upon which the latter assumption was made, would have been sufficient to prove its total inaccuracy. The houses were classed according to their height, and an assumed rate of population was assigned to each, thus—

Brick Houses of 1 story were supposed to contain	15	persons.
Ditto ..... of 2 ditto	20	
Ditto ..... of 3 ditto	25	
Ditto ..... of 4 ditto	40	
Ditto ..... of 5 ditto	100	
Ditto ..... of 6 ditto	150	

and the whole statement was of the same extravagant character.

The Kotwal, doubtless, was interested in swelling the list of towns-people, whom it was his duty to keep in subordination; and SÍTAL SINH, Mr. DEANE's Múnshí, who drew up the account, may have thought it complimentary to his master to magnify the importance of the place under his rule; but it is difficult to forbear smiling at the ultra display of their zeal and diligence in the classification of "*suspected persons*" in the town: Thus, after a catalogue of the trades and sects, we find inserted the following curious item:

"Badmásh—Those who are ready to commit forgery, ...	40	houses.
Ditto to give false evidence, ...	400	ditto.
Ditto to commit theft, ...	200	ditto.
Thángí, or those who employ thieves, ...	50	ditto.
Gamblers, ...	40	ditto.
Persons who have been taken up for theft, ...	150	
Persons who have been engaged in brawls, &c.	100	
Persons who have a pugnacious disposition, ...	400	
Persons without any profession, and therefore *strongly suspected*, ...	200	

When engaged in making a Map of the Town in 1822, I could hardly fail to entertain suspicions of ZULFICAR's vague estimate, and I would have attempted a more accurate enumeration had not apprehensions existed among the Civil Authorities that an enquiry of such a nature would be likely to lead to disturbance and dissatisfaction among the people. This opinion was grounded on the occurrences of more than one period, when an unpopular measure, on the part of the English Government, had given rise to disaffection, and even to open resistance in the Town; and, indeed, as long as such erroneous ideas of the magnitude of the place prevailed, there was room for alarm at the slightest symptom of turbulence on the part of the populace.

During the operations of the Committee of Improvement, founded by Governor General ADAM in 1823, a more constant intercourse with the Natives soon convinced me that there could be no difficulty whatever in obtaining the desired information, provided the real motives were declared, and any incipient alarms at once quieted by unreserved explanations. The classification of the *mehalas* and streets for the assessment of the *Behri*, a small *mehala* tax levied for the purpose of cleaning and repairing the street drains, afforded a convenient pretext for the commencement of the Register, as the more direct prosecution of the object was interdicted, but all precautions of this nature were, in fact, unnecessary, and only tended to impede the progress and injure the arrangement of the matter, which it thus occupied two years to bring to completion. On other grounds, the City of Benares prevented facilities for the prosecution of statistical enquiries, from its division into numerous *mehalas* or wards, under the protection of a police on the *phátekbandi* system, so called from the *phâteks* or gates of each *mehala*, which were, in former days, regularly closed at night. The watchmen are well acquainted with every house within their beat, and can generally tell the names and circumstances of their various inmates: with the assistance of these men, who also pointed out the limits of the *mehala*, my enquiries were continued from house to house, either addressed to the householders themselves, or to servants and neighbours. The *chumars* of the *mehala* having daily admittance to each house to remove dust and rubbish, were found to be useful auxiliaries in checking the estimates of population derived from other sources.

In some *mehalas*, chiefly where the richer classes resided, more difficulty was experienced in obtaining accurate returns than in others; but in general the results are worthy of confidence. I have frequently questioned native visitors as to the number of inmates in their houses, and have been surprised at its close accordance with the Register. To

ascertain however the degree to which it might be trusted, a few *mëhalas*, in different parts of the town, were selected for a careful re-examination by myself, and the opportunity was taken to insert separate returns of the males and females of each family, and further to distinguish the lodgers from the proprietors. Into these points the *Lálas* had not been permitted to enquire, on account of the delicacy of the natives, particularly the Muselmans, on the former subject. No reluctance, however, was shewn in affording to myself such additional information, except among Muselmans of rank, who sent me the details of their household in closed letters rather than declare them vivâ voce in the street.

In the re-examination I found the houses in almost every case faithfully described: the householders' names were also correct, unless where death or sale had induced changes in the course of two years: the number of inmates fluctuated a good deal, but not more than could be explained from the continual change of guests and lodgers. To render the work complete, a Census of the Civil Station and the Cantonment of Secrole was afterwards added, as well as of sixteen villages in the vicinity which may be considered as immediately dependent upon the European establishment.

The Register is in the *Nágari* character, and has been deposited in the office of the Governor General's Agent at Benares: a copy in the *Devanágari* character, is lodged in the Society's Library. The materials are arranged in nine columns, in the following order:

1. Number of the House.
2. Name of Proprietor.
3 and 4. Caste and profession of ditto.
5, 6 and 7. Number and structure of *Chouks*.
8. Height of the House in stories.
9. Number of Inhabitants.

At the close of each *mehala* is given a summary or *goshwara*. As the *mehalas* are not arranged according to any system, a double index has been appended, for alphabetical reference and for the distinction of the Town divisions. A general abstract of the whole, in English, forms the record now submitted to the Society.

I will now beg leave to recapitulate some of the results of the Census.

1. The number of houses nearly corresponds with ZULFICAR ALI's statement, being nearly thirty thousand; but there must have been a considerable increase of buildings towards the south and west of the town since 1800; as has been observable within the last few years on the side of Secrole: we can hardly, therefore, allow that the dimensions of the town have remained stationary during the last thirty years, although seemingly borne out by the above coincidence.

2. The gross population of the City may be stated at one hundred and eighty thousand souls; while Secrole and the vicinity contain twenty thousand, making a total of two lakhs; much beneath the former estimate, but still amply sufficient to justify the title of a populous city; for Benares exceeds in population either Edinburgh or Bristol, and is twice as large as Rotterdam or Brussels.

3. The average number of inmates to a house rather exceeds six; being one-twelfth greater than the average rate for the Burdwan Zillah, according to the statistical report of Mr. (late the Hon'ble) W. B. BAYLEY. It might have been expected, indeed, that the loftier houses of the City would affect the average more considerably, but there are circumstances which counteract such a tendency. In the first place, the term *Chouk* employed in the Register, does not express precisely a house, but rather a "Court" or "Quadrangle," of a tenement capable of being separately occupied or

rented. Wherever space will allow it, Indian houses are built with an open court in the centre, towards which the apartments front on all sides. A house of any magnitude comprehends several such compartments, and is assessed according to the number of these, as separate houses, in the levy of the *Behri*, the *Phátekbandi*, or any similar tax: the average inmates of a large house therefore, will be, properly speaking, some multiple of seven, the mean rate per *chouk*. Again, the lower stories of such houses are divided off into small shops, facing the street, which are tenanted, during the day only, by artisans and tradesmen: and further, the domestic servants of the upper classes, with very few exceptions, sleep at their own houses in the suburbs, and are included in the Register of those quarters, so that it often happens that the largest mansions are the most thinly peopled. This explanation is deemed necessary on account of the great discrepancy between the Kotwal's estimate of the number of inmates in the larger class of houses and my own results.

4. If the seventeen *mehalas* of the second examination may be taken as a fair average for the whole town, the number of lodgers rather exceeds that of householders; among the latter are included also those who hold *parjoti* tenures, paying ground rent to the Zemindar without any specific term of lease; a system which is generally prevalent in the suburbs or *kacha mehalas*, such as Pírí, Alípúra, Assí, &c.

5. The proportion of males and females appears to be very nearly on an equality both in the City and in Secrole: there is, however, a deficiency in the amount of female children, which is also observable in the Burdwan Tables. This may be partly owing to the system of early marriage, which causes the removal of girls from their parents' houses at a tender age, and partly to the frequent inclusion of girls with boys in the general term "*larké*," when they are spoken of by their relations.

6. The proportion of children to adults, as might be expected, is much smaller in the City than in the villages around Secrole; where the ratio of one to two and a quarter, is closely in accordance with Mr. BAYLEY's statements.

The Register is capable of affording other information which I have not yet found leisure to extract. One of principal curiosity would be the relative number of Hindú and Mohammedan inhabitants. The omission, however, is of less consequence, because another distinct method of obtaining this branch of information was adopted, which, though not capable of the same degree of accuracy, may be assumed as tolerably correct in relative numbers, while it forms a collateral check upon the Census itself.

The Hindús are divided by the circumstances of their castes, and of such trades and professions as are of a similar exclusive character, into a number of distinct corporations, united among themselves under a headman, who is variously entitled, as Choudrí, Kotwal, Mahant, Jattí, Dulpatí, &c. Many of the Muselman trades are similarly constituted. Upon many occasions of festivity, the whole of a community is assembled together; at other times apportionate presents are obliged to be distributed to every adult member of the clan. Lists of their clansmen, therefore, are commonly to be met with among the choudrís, to which access is easily obtainable. Of the different sects of Brahmans, who hold so conspicuous a place in the population of the Holy City, accurate catalogues are procurable from the *Dánádhyaksh*, or almoners of native princes, or from the pundits and priests. Thus, a list of eighty-four different sects of Gújratí Brahmans was obtained from RATANJI PANDA, a respectable native, who had several times been employed in distributing largess for opulent visitors on their pilgrimage to Kasí. The number of individual members in these was afterwards ascertained from the leading man of each sect.

Where there were no *Choudrís*, as with the *Kaeths*, or *Bhúihárs*, &c., I was obliged to have recourse to actual investigation throughout the mehalas in which they were known chiefly to reside. With the *Júláhas*, or weavers, I took advantage of one or two large feasts given by principal weavers on the marriage of their children. The number entered for these and a few other classes, must be held only as approximations; while on the contrary many of the items in the catalogue, where the authority is given, are precise and accurate enumerations. I have, on this account, inserted the names of my informants, or the authority whereon each return is quoted.

The population of Benares, according to this mode of reckoning, falls considerably short of the number given by the regular Census. By increasing each item about one-sixth, to cover omissions of children in the *Choudrís'* estimates, and unavoidable oversights in the list itself, it might have been easily made to coincide in amount, but it is more satisfactory in its present form, as pointing out the limits of error. The descriptive nomenclature of the principal persons, *Múselman*, *Hindú*, *Mehájan*, *Pandit*, and *Fakír*, which accompanied the map of Benares presented to the Society in 1822, will be found of use in explanation of the present list. In the catalogue of *Hindús*, it may be remarked, there is no separate entry for "Gentlemen" as with the *Múselmans*. The reason of this is that every *Hindú*, of whatever rank he be, belongs to a particular caste. Thus the Rajah of Benares is included in the *Bhúihár* caste, and the tables of *Brahmans*, *Kshetrís*, *Vaisyas* and *Sanyasí Fakírs* (or *Gosaíns*) comprise persons of all trades and professions.

The *Múselmans* apparently form but one-fifth of the population, and are not more numerous than the *Brahmans* alone; very few of them reside within the City, properly so called, which is almost exclusively *Hindú*.

On occasions of eclipses, religious festivals and *Mélas*, Benares is well known to be crowded with an influx of pilgrims, not only from the neighbourhood, but from every part of India. I once endeavoured to make an estimate of their numbers, and as the subject is connected with my present enquiry, I here introduce the substance of a memorandum on the subject, inserted in the proceedings of the Committee of Improvements at the time.

"For three days and nights previous to the Eclipse of the 21st May 1826, *Chaprásis* and Bearers were stationed, in pairs, at the five principal approaches to the City, for the purpose of counting the passengers by means of small pebbles, which they threw into a bag as the people passed. The Ferry people had also directions to supply returns, but it is feared that they may have purposely underrated the number of persons crossing from the south of the river. The results were as follows:

	19th May.	20th May.	21st May.	Total.
At *Nadesvar* or *Lakhípúr* bridge, ..	336	1,250	11,800	13,386
Béni Rám Pandit's garden, ...	715	1,250	9,695	11,660
Well north of *Jagatganj*, ...	151	457	4,550	5,158
Ousán Ganj, near the *Thánch*, ..	75	675	2,971	3,721
Hanumán Phátek, ...	211	450	3,244	3,905
Total, without counting people of the town and vicinity,				37,830

Ferry at *Raj Ghat* during three days, omitting common passengers, ...	806	
Ditto *Rajmandil* and *Gai Ghát*, ...	400	
Ditto *Kyli Ghát*, 20th May, ...	69	
Ditto at *Mánmandil*, *Siwála*, *Rám Ghát*, &c. say, ...	1200	
		2,475
Add for all the other approaches to the Town, say, ...		15,000
Total strangers at the Eclipse, 21st May, 1826, about ..		55,000

It should be remarked that the concourse at this eclipse was very small, and by no means to be compared with that of November 1825, when forty or fifty lives were lost in the press of the bathers on the Ghats."

Hence it is not unreasonable to conclude, that the accession to the population on such occasions sometimes even surpasses a hundred thousand persons.

The gross amount of the principal articles of food consumed, affords a tolerable method of computing or checking the comparative magnitude of places inhabited by similar races of men; and if these data could be ascertained with sufficient accuracy, the absolute population might even be calculated therefrom.

Grain would appear to be the best test to employ in such an estimate, being the most bulky, as it is the most universal article of food; but since it is not subject to a Town Duty at Benares, the quantity annually imported cannot be easily ascertained.

Salt is nearly of equally general consumption, although on a comparatively minute scale. As far as my own enquiries furnish data,* one-ninth of a maund per man per annum, is a fair average consumption; and this rate, upon a population of one lac and eighty thousand, would yield an annual total of twenty thousand maunds; now this is in close accordance with the Custom House Returns, allowing a fraction for salt smuggled into the Town out of the regular channels.

Upon other articles, such as *ghí*, tobacco, &c. less reliance can be placed, because they must be esteemed luxuries rather than necessaries.

---

* Among the labouring classes, I found the rate per man, three seers; which is, according to themselves, a minimum. *Sipahís*, and servants consume from four to six seers: *Mahájans* gave me an average of nine or ten seers; with the richer classes it may be double or treble this amount from wastage, and some allowance must be made for cattle and other sources of consumption. I have assumed four and a half seers as the mean.

I have, however, appended a table of several, obtained from the Custom House, which may prove useful in making comparisons with other Towns. I am indebted to Mr. R. N. HAMILTON, Magistrate of Benares, also, for a further table of the price of different varieties of grain for a period of twenty-one years inclusive.

One of the chief utilities of a correct Census is, that it introduces a right understanding as to what should be the produce of any tax levied upon the food, the houses, or the inhabitants of a Town. I remember once hearing a public functionary upbraided for laxity of diligence, because the consumption of *ghí* in the City of Benares fell so far short of what might have been expected upon a population of six hundred thousand souls!

The following is a Summary of the results furnished by the present Census:

	In the City.	*In Secrole and the vicinity.*
Number of Inhabitants,	181482	11876 in Native Houses. 7092 in European ditto, including Cantonments.
Number of Houses or *Chouks*,	30205	2754 Native Houses. 114 English Estates, &c.
Mehalas as divided in the Census,	369	21
Paka Houses (of Brick and Stone),	11325	73
Kacha Houses (of Mud),	16552	2639
Kacha-Paka Houses (mixed),	2328	88
Houses of One Story in height,	12590	2444
Two Stories ditto,	11838	282
Three ditto,	2996	2
Four ditto,	1019	0
Five ditto,	200	0
Six ditto,	7	0
Seven ditto,	1	0
Ruins of Houses, or spaces marked out for building,	1498	72
Gardens, *Talaos*, &c.	174	
Sivalas, or Hindoo Temples,	1000	7
Mesjids, or Muselman Mosques,	333	5
Proportion of original census to re-examination,	8932 to 8814	
Proportion of Proprietors to Lodgers in seventeen *Mehalas*, and in the Suburbs,	4310 to 4504	7753 to 1684
Proportion of Males and Females.		
Men,	3424	3354
Women,	3564	3151
Boys,	1085	1698
Girls,	741	1234
Proportion of Adults to Children.		
Adults,	6988 } 4 to 1	6505 } 2¼ to 1
Children,	1726 }	2932 }
Average ratio of Inhabitants in each *Chouk* as above,	6	6
Ditto for the *Paka* Houses,	7	
Ditto for the *Kacha* Houses,	4½	

TABLE I.

Alphabetical List of Mehalas in the City of Benares, with the Number of Houses, Inhabitants, &c. taken from the Devanágari Register, to which reference is given.

Page of *Devanágari* Register.	Name of the *Mehala, Sarak, Gali, Katra, Serai, Bazar, Ghat,* or other Division in the Census.	Number of Inhabitants.	*Chouks,* or Houses.			Total.	Height.						Ruins.	Tanks and Gardens.	Shiwalas.	Mesjids.
			Kacha.	Paka.	Mixed.		One Story.	Two Ditto.	Three Ditto.	Four Ditto.	Five Ditto.	Six Ditto.				
	A.															
183	Abkárì háta, ...	147	30	1	0	31	29	1	0	0	0	0	1	0	0	0
49	Adívisveswar, ...	365	4	43	15	62	11	36	10	1	0	0	0	0	4	0
191	Adampùra, ...	337	60	16	11	87	40	34	1	0	0	0	6	0	1	5
9	Agaganj mehala, ...	721	162	1	3	166	85	77	0	0	0	0	4	0	0	0
7	sarak, ...	413	72	7	6	85	55	88	0	0	0	0	0	0	1	1
196	Agast kùnd, ...	2392	59	234	1	294	51	95	97	27	2	0	3	2	16	1
62	Ahila Bai brahmpùrì, ..	228	2	22	1	25	1	3	15	2	0	0	1	0	3	0
151	Ajaib Sinh ka bagh,.. ..	444	77	3	8	88	46	39	0	0	0	0	1	0	0	2
13	Alipùra, ...	670	161	4	3	168	97	45	1	0	0	0	17	3	0	5
93	Alempùra, ...	584	81	14	31	126	34	78	0	0	0	0	8	0	0	6
90	Ambiya mandei, ...	674	116	19	22	157	58	75	3	0	0	0	27	1	1	2
20	Amì Chand galì, ...	35	0	5	0	5	0	1	4	0	0	0	0	0	0	0
168	Ama Mihr galì, ...	134	8	12	3	23	11	11	0	0	0	0	1	0	0	0
178	Anaj kì mundeì, ...	364	51	5	1	57	39	13	0	0	0	0	2	1	2	0
62	Arhaì Kangùra Mesjíd, ..	285	42	8	14	64	21	37	1	0	0	0	2	0	0	3
30	As-bhyro, ...	474	0	81	1	82	5	27	29	16	0	0	3	0	2	0
41	Atmabìreswar, ...	295	0	39	0	39	2	7	9	5	1	0	0	0	15	0
11	Arab kì Mesjíd, ...	49	10	2	1	13	9	2	0	0	0	0	1	0	0	1
102	Aurípúra, ...	308	59	3	5	67	22	41	0	0	0	0	3	1	0	0
179	Aurangabád mehala,.. ..	868	108	40	3	151	75	63	2	0	0	0	10	0	0	1
174	serai,.. ..	185	36	45	0	81	64	12	0	0	0	0	3	0	0	2
174	sarak,.. ..	1300	180	80	9	269	123	127	6	0	0	0	10	1	1	1
1	Ausánganj bazar, ...	1010	86	21	81	188	172	11	0	5	0	0	0	0	0	0
172	Ausánganj Siunarain's house ,..	56	1	21	47	69	69	0	0	0	0	0	0	0	0	0
140	Awedh, ...	1615	297	48	25	370	150	205	4	0	0	0	10	0	1	1
56	Azìzan mundei, ...	395	102	2	5	109	75	29	0	0	0	0	0	3	0	2
	B.															
41	Babarseid mehala, ...	205	1	25	0	26	1	6	11	5	2	0	0	0	0	1
155	Badshah ganj, ...	1665	366	54	21	448	210	209	2	0	0	0	8	5	4	3
93	Bahilia tola, ...	171	45	1	0	46	27	11	0	0	0	0	6	0	0	2
101	Bakharabád, ...	395	62	2	8	72	41	27	0	0	0	0	2	2	0	0
165	Balúe-bír, ...	406	144	12	19	175	68	88	0	0	0	0	15	1	0	3
131	Balúa, ...	78	9	1	1	11	9	2	0	0	0	0	0	0	0	0
128	Balam Das bagh, ...	168	15	5	2	22	19	2	0	0	0	0	1	0	0	0
216	Bandholal púra, ...	153	33	0	0	33	32	0	0	0	0	0	1	0	0	0
10	Bandhú, ...	666	130	4	6	140	26	10	0	0	0	0	10	0	0	4
122	Bara dev, ...	696	131	4	6	141	73	58	0	0	0	0	9	0	1	0
146	Baryar Sinh kí bagh,.. ..	161	29	2	2	33	26	7	0	0	0	0	0	0	0	0
145	sarak,.. ..	599	92	1	1	94	70	23	0	0	0	0	1	0	0	0
192	Bengalí tola, ...	1113	8	157	0	165	3	57	86	7	0	0	1	0	10	1
21	Bibì hatìa, ...	248	0	25	0	25	0	4	10	10	1	0	0	0	0	0
86	Behára Mal katra, ...	290	13	37	8	58	8	35	6	0	0	0	6	0	1	2
26	Bhat mehala, ...	387	2	47	0	49	1	10	17	15	4	0	2	0	0	0
43	Bhólùpùr, ...	365	117	11	0	128	109	11	0	0	0	0	5	0	3	0
37	Bhikharì Das, ...	637	4	59	0	63	0	2	30	22	5	0	4	0	0	0

Page of *Devanágari* Register.	Name of Mehala.	Number of Inhabitants.	Houses.			Total.	Height.						Ruins.	Tanks and Gardens.	Shiwalas.	Mesjids.
			Kacha.	Paka.	Mixed.		One story.	Two ditto.	Three ditto.	Four ditto.	Five ditto.	Six ditto.				
131	Bhùlotan, ...	706	58	12	6	76	47	25	0	0	0	0	2	0	2	0
17	Bhùtahì Imli boulì, ...	81	2	10	3	15	1	10	2	0	0	0	1	1	0	0
190	Bhadahùn, ...	698	99	16	12	127	85	28	0	0	0	0	6	0	1	12
157	Bhadynì, ...	3885	610	64	97	771	244	480	14	0	0	0	16	4	12	1
48	Bhandárì galì, ...	274	3	29	0	32	5	20	7	0	0	0	0	0	0	0
21	Bhandariya galì, ...	60	2	6	0	8	0	4	2	0	0	0	2	0	0	0
128	Bharat Dùajì khás, ...	386	48	9	15	72	37	25	3	0	0	0	6	0	1	0
189	sarak, ..	204	16	11	6	33	13	15	1	0	0	0	4	0	0	0
	tola, ..	263	38	17	13	68	23	27	2	0	0	0	14	0	1	1
24	Bhyronáth khás, ...	397	1	83	0	84	3	69	29	4	1	0	0	0	8	0
23	sarak, ..	315	1	48	0	49	0	27	19	0	0	0	0	0	0	1
26	bazar, ..	383	0	63	0	63	2	2	25	21	11	0	0	0	1	1
22	Bindraban Jánì, ...	215	4	30	0	34	0	0	20	10	0	0	4	0	0	0
39	Birjù Sáh galì, ...	134	0	9	0	9	0	0	4	2	2	1	0	0	0	0
1[illegible]	Bùchaì tola, ...	147	8	36	4	48	4	19	17	1	0	0	3	1	2	0
40	Bùla nala, ...	1429	54	110	23	187	45	56	39	10	4	0	29	0	2	2
169	Bridhkál kùa khas, ...	272	50	5	5	60	25	26	0	0	0	0	4	2	0	3
	sarak, ..	229	21	20	15	56	16	31	0	0	0	0	2	1	5	1
115	Brahmnál, ..	815	6	139	1	146	10	48	61	4	0	0	2	0	21	0
	C															
31	Champa Saíd, ...	31	0	7	0	7	1	4	1	0	0	0	0	0	0	1
38	Chandúnai galí, ...	56	0	7	0	7	0	5	2	0	0	0	0	0	0	0
,,	khás, ...	415	1	47	0	48	0	12	17	14	1	0	2	0	2	0
95	Chandúpúra	191	47	10	8	65	22	31	0	0	0	0	8	0	0	3
44	Chaparía katra, ...	28	1	24	0	25	20	1	3	1	0	0	0	0	0	0
162	Chatúshastí ghát, ...	215	2	39	0	41	2	8	13	0	0	0	0	0	18	0
19	Chaukhambha, ...	312	0	50	0	50	1	8	13	23	4	0	0	0	1	0
151	Chét ganj gola, ...	264	58	15	9	82	41	40	0	0	0	0	0	1	0	0
148	sarak, ...	164	42	1	0	43	32	10	0	0	0	0	1	0	0	0
57	Chítanpúra khas, ...	820	153	29	20	202	51	128	3	0	0	0	12	2	0	6
89	sarak, ...	188	29	4	8	41	11	30	0	0	0	0	0	0	0	4
11	Chohra (Ausanganj), ..	291	57	2	3	63	36	22	1	0	0	0	3	0	0	0
32	Chouk (53 Sirkarí shops), ..	187	0	85	0	85	0	6	23	0	0	0	0	0	0	3
215	Chamrotí (Secrole), ...	1159	232	0	3	235	205	22	0	0	0	0	7	0	0	1
222	Cantonments, ...	3195	17	11	6	34	0	0	0	0	0	0	0	0	0	0
	D															
22	Dadú chouk, ...	219	1	30	0	31	3	17	8	2	0	0	1	0	0	0
52	Dál kí mandei, ...	749	0	86	6	102	16	46	39	1	0	0	0	0	0	0
144	Dalépganj, ...	85	2	2	2	6	2	4	0	0	0	0	0	0	0	0
144	Dandí (*Hanuman*) Ghat, .	268	18	34	13	65	29	31	1	0	0	0	2	0	2	0
134	Dasáswamedh khas, ..	294	9	35	2	46	11	27	2	0	0	0	0	0	6	0
122	sarak, ..	358	20	41	15	76	24	35	10	0	0	0	0	0	7	0
3	Dáránagar khas, ...	884	69	58	42	169	61	78	5	22	0	0	0	0	0	3
4	sarak, ...	634	68	29	22	119	60	41	4	0	0	0	11	0	3	0
171	Dénanáth gola, ...	380	24	64	31	119	37	72	2	2	0	0	6	0	0	0
195	Deonáthpura bara, ...	465	13	59	4	76	16	33	15	1	0	0	0	0	10	1
195	chhota, ..	144	10	10	1	21	2	16	1	0	0	0	2	0	0	0
200	galí, ..	202	23	6	0	29	7	18	4	0	0	0	0	0	0	0
98	Dhanípúra, ...	315	73	4	0	77	57	35	0	0	0	0	3	0	0	2
167	Dhanésra, ...	93	17	1	0	18	11	5	0	0	0	0	3	0	0	0

Page of *Devanágarí* Register.	Name of Mehala.	Number of Inhabitants.	Houses.				Height.						Ruins.	Tanks and Gardens.	Shiwalas.	Mesjids.
			Kacha.	Paka.	Mixed.	Total.	One Story.	Two Ditto.	Three Ditto.	Four Ditto.	Five Ditto.	Six Ditto.				
116	Dharmkúp, ...	121	2	25	0	27	0	6	10	0	0	0	2	0	9	0
102	Digía, ...	120	18	1	3	22	10	8	0	0	0	0	2	2	0	0
116	Dir Mal galí, ...	177	0	25	1	26	1	11	11	2	0	0	0	0	1	0
96	Dosípúra, ...	383	79	17	2	98	28	52	0	0	0	0	4	7	0	7
84	Douriabír, ...	780	187	9	1	197	157	17	1	0	0	0	16	1	5	0
25	Dúgdh Binaik, ...	1236	1	122	0	123	0	1	59	48	7	0	1	0	1	0
167	Dulí garha, ...	174	26	5	9	40	7	32	0	0	0	0	1	0	0	0
138	Dúrga kúnd, ...	898	94	34	3	131	72	22	0	0	0	0	10	19	7	1
212	Déthúra (Secrole,)	219	48	1	4	53	41	7	0	0	0	0	4	0	0	1
	E															
123	Ehía Ber (*Ramapura,*) ..	748	17	92	8	117	7	39	43	9	0	1	3	1	14	1
162	Ehía Ber (*Dasáswamédh,*) ..	161	0	26	1	27	1	6	10	4	0	0	0	0	6	0
	F															
45	Feríd Seíd, ...	228	65	1	0	66	50	11	0	0	0	0	4	0	0	1
	G															
109	Gái ghát, ...	925	86	94	26	206	60	103	18	1	0	0	17	1	3	3
142	Gambhír Sinh Bára, ..	504	120	6	5	131	73	39	0	0	0	0	19	0	0	0
23	Ganésh chameria, ...	344	1	80	0	81	0	6	56	16	1	0	1	0	1	0
21	Ganésh gali, ...	44	0	8	0	8	1	6	1	0	0	0	0	0	3	0
199	Ganésh mehala, ...	1231	26	34	7	167	19	97	29	0	0	0	4	0	17	1
26	Ganésh diksit, ...	351	0	54	0	54	0	1	25	27	1	0	0	0	0	0
161	Ganga mehal, ...	163	19	17	4	40	2	26	5	0	0	0	3	0	4	0
35	Garwási tola, ...	1357	11	183	3	197	10	79	71	17	0	0	4	0	16	1
24	Ghasí tola, ...	423	1	47	0	48	0	1	18	24	4	0	1	0	0	0
192	Ghasíara tola, ...	384	73	7	10	90	58	17	1	0	0	0	12	0	0	2
137	Ditto (*Ramapúra,*)	342	106	0	0	106	84	1	0	0	0	0	19	2	0	0
20	Ghats (Assí to Berna,) ..	887	58	455	1	514	69	42	18	2	0	0	12	0	370	1
176	Ghihata, ...	1144	140	32	18	190	119	61	4	0	0	0	3	3	0	0
51	Gogharána, ...	147	4	11	0	15	7	5	3	0	0	0	0	0	0	0
123	Gobindpúra (bara,)	795	24	76	1	101	20	69	8	0	0	0	3	0	0	1
30	ch,hota, ...	247	3	59	0	62	8	25	22	1	0	0	1	0	3	0
31	sarak, ...	332	1	57	0	58	23	24	7	0	0	0	2	0	1	1
29	Gobind Das katra, ...	272	18	32	3	53	19	29	0	0	0	0	4	1	0	0
25	Gobind Naik mehala, ..	691	0	61	0	61	1	2	17	29	12	0	0	0	0	0
118	Gobardhen serai, ...	2199	313	17	54	384	184	171	4	0	0	0	22	2	1	0
152	sarak, ...	289	48	12	9	69	33	29	4	0	0	0	2	1	0	0
37	Gola galí	649	0	48	0	48	0	2	19	25	2	0	0	0	0	0
37	Gopál Das Sah, ...	281	0	44	0	44	1	3	13	19	7	1	0	0	0	0
102	Gopál pura, ...	171	30	5	5	40	27	10	0	0	0	0	3	0	0	0
85	Gouri ganj, ...	822	192	1	4	197	126	45	0	0	0	0	24	0	2	0
73	Gouri Ganesh, ...	1026	92	31	23	146	72	63	2	0	0	0	6	0	3	0
27	Gual Das Sah, ...	1052	3	148	1	152	2	28	45	50	20	2	4	0	1	0
106	Gular talé, ...	372	43	32	16	91	29	51	0	0	0	0	10	0	0	1
125	Gulzár Mehal, ...	159	19	16	3	38	8	25	1	0	0	0	3	0	0	1
58	Gyán Bápi, ...	89	1	18	1	20	2	6	7	0	0	0	0	0	3	2
207	Ganga Dher Pura, (Secrole,) ..	232	44	0	3	47	41	5	0	0	0	0	1	0	0	0
213	Grant Bazar.	434	91	0	3	94	77	14	0	0	0	0	3	0	0	0

Page of *Devanágari* Register.	Name of Mehala.	Number of Inhabitants.	Houses.				Height.						Ruins.	Tanks and Gardens	Shiwalas.	Mesjids.
			Kacha.	Paka.	Mixed.	Total.	One story.	Two ditto.	Three ditto.	Four ditto.	Five ditto.	Six ditto.				
	H															
77	Háji Dás mehala, ...	71	0	16	0	16	2	8	4	1	0	0	1	0	0	0
150	Habíbpura khas, ...	1331	215	10	4	229	167	51	1	0	0	0	9	1	0	0
150	sarak, ...	208	39	0	1	40	14	25	0	0	0	0	1	0	0	0
180	Hankár tola, ...	670	55	61	8	224	28	78	9	0	0	0	12	0	1	0
54	Hakák tola, ...	572	42	44	6	92	48	35	5	0	0	0	0	0	0	4
113	Hanumán ganj west, ..	107	19	0	0	19	9	9	0	0	0	0	1	0	0	0
113	east, ..	256	59	4	1	64	37	27	0	0	0	0	0	0	0	0
114	sarak, ..	62	14	0	2	16	13	3	0	0	0	0	0	0	0	0
114	Hanumán phatek, ...	94	23	8	3	34	18	13	0	0	0	0	0	0	0	0
135	Hanumán pura, ...	176	47	0	0	47	40	6	0	0	0	0	1	0	0	0
167	Hanstírath khás, ...	620	80	54	14	148	65	61	5	0	0	0	13	1	3	0
	sarak, ...	286	43	17	11	71	33	29	5	0	0	0	3	0	0	0
130	Har,ha khás, ...	1460	165	59	18	242	123	89	2	0	0	0	21	0	4	3
129	sarak, ...	415	27	50	4	81	24	42	10	0	0	0	3	0	0	2
139	Hára bagh, ...	972	146	39	28	213	61	133	5	0	0	0	13	0	1	0
143	Hát,hi kháneh, (Princes,) ..	146	48	0	1	49	24	14	0	0	0	0	11	0	0	0
107	Himet Behádur galî, ..	39	4	5	1	10	1	5	3	0	0	0	1	0	0	0
143	Hingua, ...	373	74	18	5	97	45	44	0	0	0	0	3	3	1	1
154	Hoseinpura, ...	287	50	9	14	73	16	50	0	0	0	0	4	1	0	2
50	Houz katora khás, ...	909	45	96	13	154	46	89	15	1	0	0	0	0	2	1
49	sarak, ...	473	16	63	3	82	16	37	23	2	0	0	0	0	3	1
	Hyder ganj, ...	431	101	0	0	101	78	11	0	0	0	0	12	0	0	0
101	Hyder Ali háta, ...	88	34	0	1	35	15	6	0	0	0	0	5	5	0	4
10	Hynstalé, ...	166	28	3	7	38	6	26	0	0	0	0	4	0	0	2
208	Húgal ganj (Secrole), ...	274	92	1	0	93	82	5	0	0	0	0	5	0	0	1
	I															
219	Impur, ...	488	115	0	0	115	0	0	0	0	0	0	0	0	0	0
104	Iswargangi khas, ...	782	111	3	5	119	75	34	0	0	0	0	3	1	6	0
103	sarak, ...	385	58	6	9	73	38	26	0	0	0	0	8	0	1	0
	J															
104	Jagéswar, ...	243	20	23	7	50	12	23	0	0	0	0	1	12	1	0
119	Jagjéwanpura, ...	551	93	13	16	122	59	52	0	0	0	0	6	0	0	5
66	Jagat ganj, ...	1045	228	18	3	249	187	43	7	0	0	0	9	1	0	2
	Jelálipura, ...	406	117	1	4	122	84	22	0	0	0	0	12	3	0	1
15	Jelálud-dínpura, ...	186	51	3	1	55	31	32	0	0	0	0	0	0	0	2
198	Jangam barí, ...	1063	183	17	1	201	120	61	0	0	0	0	15	0	5	0
11	Jynpura, ...	287	68	5	0	73	42	24	0	0	0	0	4	0	0	3
68	Jytpura, ...	380	40	8	7	55	44	9	0	0	0	0	0	2	0	0
20	Jytanber, ...	634	20	79	6	105	18	39	33	2	1	0	6	0	5	1
	K															
191	Kasim Ali Khan katra, ..	135	0	14	0	14	0	9	5	0	0	0	0	0	0	0
57	Kazi kí mandei, ...	454	51	43	20	114	40	64	9	0	1	0	0	0	0	0
126	Kazi ka darwaza, ...	391	57	39	18	114	49	38	11	0	0	0	11	0	1	4
65	Kazi ki gali, ...	137	30	3	6	39	10	24	1	0	0	0	4	0	0	0
172	Kazipura, *(Shékh Salim)* ..	654	57	21	13	91	57	31	2	0	0	0	1	0	0	0

Page of *Devanágarí* Register.	Name of Mehala.	Number of Inhabitants.	Houses.				Height.						Ruins.	Tanks and Gardens.	Shiwalas.	Mesjids.
			Kacha.	Paka.	Mixed.	Total.	One story.	Two ditto.	Three ditto.	Four ditto.	Five ditto.	Six ditto.				
16	Kazipura, (*Alipura*) ..	400	114	5	0	119	71	32	0	0	0	0	6	8	0	2
173	Kazipura, ...	465	33	56	2	91	34	46	8	0	0	0	1	0	0	2
219	Kazipura, ...	135	37	0	0	37	37	0	0	0	0	0	0	0	0	0
	Kileh kohna, (*vide* Purani kot)															
181	Kali mehal, ...	167	31	2	1	34	23	10	0	0	0	0	1	0	0	0
117	Kalika gali, ...	162	0	54	0	54	2	25	19	2	0	0	2	0	4	0
61	Kámeswar, ...	215	25	8	6	39	9	25	0	0	0	0	5	0	0	0
134	Kashmiri ganj, ...	748	168	0	0	168	136	26	0	0	0	0	5	1	0	0
54	Kásipura, ...	522	18	56	7	81	29	48	3	0	0	0	0	0	0	1
200	Kasirám Pátak, ...	100	0	11	0	11	8	3	0	0	0	0	0	0	0	0
162	Kéwalgiria, ...	148	0	32	0	32	0	5	24	1	0	0	0	0	2	0
14	Khájapura, ...	255	74	5	4	83	45	26	0	0	0	0	10	0	0	2
163	Khálispura, ...	898	1	116	3	120	2	47	61	5	0	0	0	0	3	2
107	Khirki derwázeh, ...	165	12	33	2	47	6	18	13	2	0	0	7	0	1	0
87	Khójwa serai, ...	736	164	7	2	173	129	38	0	0	0	0	3	1	2	0
38	Khadéru mal, ...	136	0	13	0	13	0	0	2	10	1	0	0	0	0	0
107	Koila bazar, ...	191	18	20	12	50	9	33	5	0	0	0	3	0	0	0
55	Kundigar tola, ...	285	0	55	0	55	8	35	10	1	0	0	0	0	0	1
39	Kunj gali khas, ...	61	0	22	0	22	2	5	11	3	0	0	0	0	0	0
32	phatekbáher, ..	36	0	51	0	51	27	29	3	2	0	0	0	0	0	0
33	chakla, ..	47	0	7	0	7	4	3	0	0	0	0	0	0	0	0
58	Kutbar Seid, ...	149	24	3	5	32	17	13	0	0	0	0	0	0	0	2
169	Kutwa, ...	335	63	9	17	82	17	16	0	0	0	0	12	0	0	4
48	Kotwálpura, ...	692	15	77	1	93	23	46	22	0	0	0	0	0	2	0
8	Kachí bagh, ...	646	50	2	0	152	56	88	0	0	0	0	7	0	0	1
44	Kachouri gali, ...	112	1	12	0	13	1	2	5	5	0	0	0	0	0	0
70	Kabir Choura khas, ..	916	17	9	11	137	69	64	0	0	0	0	4	0	0	0
69	sarak, ..	372	38	6	14	58	25	32	0	0	0	0	0	0	0	1
82	Kamaksha, ...	1023	147	32	5	184	147	23	4	0	0	0	1	0	9	0
97	Kamálpura, ...	255	52	5	6	63	20	38	0	0	0	0	3	1	0	1
11	Kaman garha, ...	140	34	2	7	43	13	18	0	0	0	0	3	1	0	8
12	sarak, ...	225	71	0	0	71	58	5	0	0	0	0	7	0	0	1
42	Kanhya Lal bazar, ..	350	31	7	4	42	26	11	2	0	0	0	3	0	0	0
68	Karni bazar, ...	250	22	11	8	41	15	22	0	0	0	0	0	0	1	3
29	Kern ghanta, ...	327	27	41	2	70	23	35	4	0	0	0	7	0	0	1
64	Ketwapúra sarak, ...	337	45	23	16	84	19	50	2	0	0	0	7	0	0	6
91	khas, ..	1334	220	50	62	332	141	155	5	0	0	0	27	0	2	2
213	Khajúree (Secrole), ..	984	228	11	3	242	214	16	0	0	0	0	10	0	1	1
	L.															
77	Lalúsur, ...	179	4	37	0	41	1	10	24	2	0	0	4	0	0	0
12	Lalanpúra khas, ...	94	18	1	0	19	12	7	0	0	0	0	0	0	0	0
12	sarak, ...	45	25	0	0	25	16	3	0	0	0	0	3	2	0	2
43	Lahorí tola, ...	617	5	125	0	130	2	40	51	9	0	0	5	0	23	0
108	Lala Sand gali, ...	175	2	22	3	27	1	14	10	1	0	0	1	0	0	0
69	Lál Khan mehala, ...	579	80	58	13	151	52	66	5	0	0	0	23	1	1	3
62	chouhata, ..	228	35	41	12	88	30	46	2	0	0	0	8	0	0	3
220	Lachipura, ...	435	87	0	0	87	83	1	0	0	0	0	3	0	0	0
76	Lachmi Josi gali, ..	41	3	6	0	9	0	2	2	2	0	0	3	0	0	0
97	Ladhenpúra, ...	452	93	3	1	97	26	59	0	0	0	0	9	0	0	3
181	Lahanpúra khas, ...	256	34	6	2	42	20	18	0	0	0	0	1	0	0	2
181	sarak, ...	496	60	14	4	78	28	48	1	0	0	0	1	0	0	0
39	Lakhi chabútré, ...	219	0	20	0	20	0	2	6	7	5	0	0	0	0	0

Page of *Devanágari* Register.	Name of Mehala.	Number of Inhabitants.	Houses.				Height.						Ruins.	Tanks and Gardens.	Shiwalas.	Mesjids.
			Kacha.	Paka.	Mixed.	Total.	One story.	Two ditto.	Three ditto.	Four ditto.	Five ditto.	Six ditto.				
79	Lakusár, ...	201	30	3	0	33	24	5	0	0	0	0	1	0	3	0
177	Lakhsmi kúnd, ...	777	52	45	3	100	57	23	12	1	0	0	1	4	2	0
46	Lalita Ghát, ...	112	0	13	0	13	0	12	1	0	0	0	0	0	0	0
22	Latu ka gali	141	1	21	0	22	0	1	12	8	0	0	1	0	0	0
184	Lillapura.	986	183	10	0	193	166	12	1	0	0	0	5	5	2	3
	M.															
18	Mádhoray Mehala, ..	656	0	80	0	80	0	3	45	16	4	0	0	0	11	1
26	Mádho Das Samia gali, ..	51	0	9	0	9	0	0	3	5	1	0	0	0	0	0
71	Mádho Das ki bagh, ..	354	23	10	16	49	17	29	1	0	0	0	2	0	0	0
104	sarak, ..	425	48	24	7	79	32	38	0	0	0	0	8	1	0	0
29	Machharwata, ...	402	3	79	0	82	7	59	8	3	0	0	3	0	2	0
58	Madár tola, ...	136	29	6	3	38	9	20	0	0	0	0	7	0	0	2
5	Madhméswar, ...	840	122	22	25	169	73	56	1	0	0	0	33	0	6	0
193	Madenpúra, ...	1851	71	189	28	288	38	172	51	1	0	0	4	1	8	13
21	Maden Mohen gali, ..	91	0	14	0	14	0	4	9	1	0	0	0	0	0	0
52	Mahima inára, ...	658	19	53	0	79	25	51	3	0	0	0	0	0	0	0
189	Malai tola, ...	546	80	19	8	107	54	34	5	0	0	0	11	0	1	2
39	Manirudouleh, ...	142	0	11	0	11	0	2	7	2	0	0	0	0	0	0
110	Manhari pipal, ...	90	1	13	1	15	0	14	0	0	0	0	1	0	0	0
22	Mansárám gali, ...	55	0	5	0	5	0	2	2	1	0	0	0	0	0	0
121	Manyar Sinh houli, ..	1165	245	15	23	283	138	119	3	0	0	0	19	8	1	0
33	Mámádeo, ...	489	19	78	0	97	16	24	34	11	1	0	9	0	2	0
46	Mán Mandil, ...	738	77	27	4	108	25	76	5	0	0	0	0	0	2	0
127	Mán Ray gali, ...	57	4	19	2	25	7	13	4	0	0	0	1	0	0	0
99	Mánpúra, ...	414	102	1	5	108	56	45	0	0	0	0	6	0	0	1
200	Mánsarwar, ...	1503	27	6	4	91	16	49	7	0	0	0	1	0	18	0
47	Márkandi Sookul brp. ..	157	0	10	0	10	0	8	2	0	0	0	0	0	0	0
61	Mátha tola, ...	155	4	21	5	30	2	25	2	0	0	0	1	0	0	0
115	Mir Ghát khas, ...	602	58	61	4	123	20	61	19	5	0	0	10	0	8	0
45	sarak, ..	318	1	57	0	58	1	16	34	3	0	0	0	0	4	0
178	Mir Ján ke bagh, ...	17	12	1	0	13	9	4	0	0	0	0	0	0	0	0
31	Mirza Imámi chata, ..	34	0	5	0	5	1	1	3	0	0	0	0	0	0	0
185	Misr pokhra, ...	1125	63	82	9	154	69	49	18	6	0	0	5	1	6	0
126	Mokim ganj, ...	335	85	7	15	107	59	37	0	0	0	0	9	0	0	2
147	Molni tola, ...	682	113	4	7	124	83	41	0	0	0	0	0	0	0	0
22	Moni ka gali, ...	31	0	4	0	4	0	0	2	2	0	0	0	0	0	0
166	Mohamed Seid, ...	285	63	2	2	67	16	44	0	0	0	0	3	2	0	2
63	Múlvi bazar, ...	99	21	2	1	24	14	9	0	0	0	0	1	0	0	0
164	Munshi gali p,hatek, ..	94	0	12	0	12	0	2	8	0	0	0	0	0	2	0
170	Murgia tola, ...	161	52	1	9	62	19	26	0	0	0	0	12	2	1	2
58	Murli gali, ...	78	1	11	0	12	1	5	6	0	0	0	0	0	0	0
21	Mesjid gali, *(Jytanber)* ..	397	10	43	13	66	17	37	7	0	0	0	4	0	0	1
108	Matsyodari khas, (subdivided)															
108	Ditto chamrauti, ...	24	12	0	0	12	12	1	0	0	0	0	0	0	0	0
	N.															
127	Nachni Kúa, ...	625	97	48	21	166	51	86	3	0	0	0	21	0	2	3
221	Nadéswar, ...	1389	234	12	0	246	184	48	2	0	0	0	9	2	1	0
105	Nakhás, ...	413	88	8	17	113	48	51	3	0	0	0	9	0	0	2
171	Ditto, *(Ausanganj)* ..	268	53	16	8	77	48	19	1	0	0	0	4	2	2	1
17	Naik ka bazar, ...	821	51	56	24	131	50	49	5	0	0	0	17	4	6	0

Page of *Devanágari* Register.	Name of Mehala.	Number of Inhabitants.	Houses.				Height.						Ruins.	Tanks and Gardens.	Shiwalas.	Mesjids.
			Kacha.	Paka.	Mixed.	Total.	One story.	Two ditto.	Three ditto.	Four ditto.	Five ditto.	Six ditto.				
99	Nág Kúa, ...	325	74	2	0	76	45	26	0	0	0	0	5	1	0	1
44	Nandú Farya Gali, ...	126	5	15	0	20	6	10	4	0	0	0	0	0	0	0
35	Nanden Sah m.	724	2	87	0	89	1	7	28	35	15	1	1	0	0	0
72	Narharpúra, ...	775	143	3	14	160	95	60	0	0	0	0	4	0	0	1
163	Nánú Sah brahmpurí, ...	177	0	17	0	17	0	3	12	1	0	0	1	0	0	0
22	Narain Diksit m.	444	0	65	0	65	7	34	18	4	0	0	1	0	1	0
79	Nawab ganj, *(Mizrpokhra)* ..	379	60	16	2	78	65	9	2	0	0	0	0	0	2	0
136	Nawab ganj, *(Durgakúnd)* ..	1015	307	0	0	307	246	39	0	0	0	0	21	1	0	0
113	Negapúra, ...	59	26	0	0	26	25	0	0	0	0	0	1	0	0	0
48	Níchí brahmpurí, ...	339	4	44	0	48	3	23	22	0	0	0	0	0	0	0
43	Nipáli Khapra, ...	195	2	27	0	29	3	11	14	1	0	0	0	0	0	0
41	Nya Ghát, ...	118	0	9	0	9	0	0	3	5	1	0	0	0	0	0
2	Nyapúra, *(Ausánganj)* ..	693	67	28	29	124	52	56	4	1	0	0	8	2	0	1
90	Ditto, *(Kazi mandei)*	250	38	8	5	51	5	38	1	0	0	0	6	0	0	1
80	Nyí Basti, *(Rámápura)* ..	639	101	0	0	101	71	29	0	0	0	0	1	0	0	0
69	Ditto, *(Gouriganj)*	576	79	2	0	81	69	12	0	0	0	0	0	0	0	0
103	Ditto, *(Iswargangí)*	305	49	1	1	51	35	11	0	0	0	0	2	2	1	0
98	Ditto.	122	33	2	0	35	27	6	0	0	0	0	2	0	0	0
	O.															
211	Orderly bazar (Secrole). ..	1076	273	12	7	292	192	93	0	0	0	0	5	0	1	1
	P.															
162	Panri Ghat, ...	259	3	28	5	36	1	14	15	0	0	0	2	0	4	0
107	Páta Derwázeh, ...	112	9	16	3	28	4	13	5	1	0	0	4	0	1	0
74	Piri bari, ...	2601	326	34	25	385	291	110	2	0	0	0	16	0	1	5
132	chhoti, ...	1117	120	31	8	159	109	34	2	0	0	0	13	0	1	0
132	sarak, ...	783	73	22	10	105	62	36	1	0	0	0	3	0	2	1
20	Phúl bari brahmpuri, ...	134	1	16	0	17	0	0	9	4	3	0	1	0	0	0
113	Phúlwaria, ...	119	22	1	2	25	7	16	0	0	0	0	1	0	0	1
183	Pitr kund mehala, ...	1538	275	23	10	308	234	52	1	0	0	0	13	1	2	5
118	sarak, ...	883	154	28	10	192	106	59	0	0	0	0	8	10	0	9
144	Pitambarpura, ...	339	77	13	3	93	57	31	0	0	0	0	3	0	2	0
53	Púráni Adálat, ...	904	17	86	1	104	21	54	26	0	0	0	0	0	0	3
187	Púráni Kót, ...	729	121	8	16	145	95	40	1	0	0	0	6	0	0	3
21	Pouti gali, ...	62	0	9	0	9	0	3	3	3	0	0	0	0	0	0
39	Pránnáth gali, ...	157	0	15	0	15	0	2	10	3	0	0	0	0	0	0
124	Prehlád Ghát, ...	478	39	90	21	150	27	97	9	0	0	0	10	0	6	1
76	Pathar gali, *(Bhyronáth)* ..	208	0	36	0	36	0	12	13	8	3	0	0	0	0	0
50	Pathar gali, *(Houzkatora)* ..	272	6	17	4	27	4	19	1	0	0	0	3	0	0	0
41	Patni tola, ...	497	0	48	0	48	2	4	30	6	0	0	1	0	5	0
106	Pytháni tola, ...	260	74	11	10	95	37	40	0	0	0	0	11	0	0	7
220	Piaria pokhri, (Secrole) ..	185	36	0	0	36	36	0	0	0	0	0	0	0	0	0
206	Pahárpur (Secrole).	1115	245	1	0	246	209	29	0	0	0	0	7	0	1	0
	R.															
187	Ráj Ghát	341	82	4	6	92	73	15	0	0	0	0	2	0	0	2
189	Ráj Ghát bazar, ...	269	14	16	6	36	10	19	1	0	0	0	4	0	0	2
44	Ráj Gir tola, ...	528	30	87	5	122	17	62	24	0	0	0	2	0	15	2
110	Ráj Mandil Mehala, ...	650	52	83	45	180	18	110	26	1	0	0	10	0	15	0
110	pushta, ...	113	23	12	1	36	11	18	2	0	0	0	0	0	5	0

Page of *Devanágari* Register.	Name of Mehala.	Number of Inhabitants.	Houses.				Height.						Ruins.	Tanks and Gardens.	Shivalas.	Mesjids.
			Kacha.	Paka.	Mixed.	Total.	One story.	Two ditto.	Three ditto.	Four ditto.	Five ditto.	Six ditto.				
111	Rajmandil bazar, ...	233	3	40	1	44	3	15	19	5	0	0	0	0	2	0
6	Rájapura mehala, ...	877	112	9	41	162	52	102	0	0	0	0	8	0	0	0
6	sarak, ...	437	22	6	15	43	18	22	0	0	0	0	2	1	0	0
27	Rája Rám gali, ...	53	5	5	0	10	1	1	2	1	1	0	4	0	0	0
31	Rája Derwazeh, ...	329	2	50	0	52	25	0	19	0	0	0	4	0	2	2
19	Rájrajéswari ghat, ...	1577	0	142	0	142	5	11	59	45	15	0	1	0	6	0
78	Rámapura khas	1661	188	66	15	269	150	92	11	0	0	0	9	0	7	0
79	sarak, ...	565	32	20	8	60	30	27	0	0	2	0	0	0	1	0
	chota, ...															
163	Rána mehal, ...	158	7	23	1	31	4	16	5	0	0	0	2	0	4	0
117	Rána Bhuwáni brahmpurí, ..	151	0	33	1	34	0	15	10	7	0	0	0	0	2	0
19	Rangil Das mehala, ...	296	0	24	0	24	0	1	3	15	5	0	0	0	0	0
100	Rasulpura, ...	715	151	11	13	175	64	84	0	0	0	0	20	2	0	5
76	Ratan phatek, ...	179	5	27	0	32	1	3	15	7	1	0	4	0	1	0
88	Reori taláo, ...	71	23	1	0	24	22	1	0	0	0	0	0	0	1	0
32	Resham katra, ...	277	4	38	0	42	4	14	19	2	0	0	1	0	0	0
	S.															
18	Sadánand bazar, ...	572	114	22	10	146	89	49	0	0	0	0	6	0	2	0
187	Sadár mehala, ...	191	48	10	7	65	36	22	0	0	0	0	5	0	0	2
64	Salimpura, ...	429	77	13	7	97	34	56	1	0	0	0	4	0	0	2
28	Sapt Ságar, ...	656	60	70	2	132	51	55	6	1	0	0	13	1	3	2
188	Sarétabad, ...	589	118	12	8	138	113	13	0	0	0	0	4	0	6	2
47	Sákshi Binaik, ...	483	4	59	3	66	10	26	9	5	0	0	0	0	15	1
14	Salárpura mehala, ...	486	107	10	3	120	49	58	1	0	0	0	5	2	0	5
15	sarak, ...	246	66	10	1	77	41	35	0	0	0	0	0	0	0	1
148	Séndpura, ...	963	130	1	9	140	106	30	0	0	0	0	3	1	0	0
149	sarak, ...	504	84	2	1	87	69	15	0	0	0	0	2	0	0	1
4	Sésman bazar, ...	150	6	14	11	31	7	20	1	0	0	0	2	0	0	1
201	Shahzadeh's family, &c. ..	247	26	12	20	58	12	46	0	0	0	0	0	0	0	0
51	Sháma gali, ...	91	2	7	1	10	1	6	2	1	0	0	0	0	0	0
186	Shékh Salim phatek, ...	665	103	31	6	40	60	75	0	0	0	0	1	0	0	4
22	Shukul gali, ...	75	0	8	0	8	0	0	6	2	0	0	0	0	0	0
117	Shakarkund gali, ...	336	1	40	3	44	6	17	12	6	2	0	0	0	1	0
34	Sidhéswari, ...	1396	6	135	1	142	6	9	55	48	10	1	3	0	10	0
17	Sidhmáta gali, ...	255	3	30	3	36	5	13	15	1	0	0	2	0	0	0
24	Síva Choudri gali, ...	109	3	13	0	16	4	7	3	0	0	0	2	0	0	0
76	Siw Rám Bhat gali, ...	84	0	11	0	11	0	2	5	3	1	0	0	0	0	0
63	Sohga Garhi, ...	218	59	6	4	69	46	18	0	0	0	0	4	0	0	1
164	Sonarpura, ...	1050	99	101	24	224	61	112	23	24	0	0	0	0	3	1
36	Sukhlál Sah mehala, ...	932	6	109	2	117	3	39	27	29	5	0	5	0	9	0
16	Sundar Das bagh, ...	433	0	55	2	57	2	17	19	14	5	0	0	0	0	0
17	sarak, ...	134	22	5	1	28	17	6	1	0	0	0	2	2	0	0
21	gali, ...	57	0	7	0	7	0	0	1	3	3	0	0	0	0	0
39	Sundya, ...	741	18	66	6	90	13	43	17	8	0	0	9	0	0	0
176	Súraj kúnd, ...	783	59	43	3	105	58	38	0	0	0	0	6	2	1	0
42	Súr tola, ...	1762	2	147	0	149	0	11	78	48	9	1	2	0	0	0
208	Secrole or Sikror, ...	933	185	0	0	185	173	7	0	0	0	0	5	0	0	0
216	Seopur khas, ...	138	45	2	0	47	47	0	0	0	0	0	0	0	0	0
217	pichli, ...	695	158	10	0	168	163	2	0	0	0	0	2	0	1	0
218	pancho pándava, ..	930	22	9	1	232	224	0	0	0	0	0	6	0	2	0
216	Station, Civil	957	0	3	57	60	59	1	0	0	0	0	0	0	0	0
209	Sadar bazar.	898	231	0	1	232	196	32	0	0	0	0	0	0	0	0

Page of Devanágarí Register.	Name of Mehala.	Number of Inhabitants.	Houses. Kacha.	Houses. Paka.	Houses. Mixed.	Total.	Height. One story.	Height. Two ditto.	Height. Three ditto.	Height. Four ditto.	Height. Five ditto.	Height. Six ditto.	Ruins.	Tanks and Gardens.	Shiwalas.	Mesjids.
	T															
124	Télía nála, ...	306	49	27	2	78	23	46	3	0	0	0	4	0	0	2
67	Télía bagh, ...	659	128	0	4	132	113	14	0	0	0	0	5	0	0	0
95	Terhí Ním, ...	714	61	49	6	116	29	62	10	7	0	0	5	2	8	0
38	Thathérí bázar, ...	873	2	82	0	84	1	15	32	25	7	0	2	0	1	1
60	Trilochan khas, ...	304	9	53	9	71	15	42	9	1	0	0	1	0	3	0
61	sarak, ...	441	59	29	15	103	47	34	10	1	0	0	4	0	1	6
94	Tripur bhyravi, ...	420	24	61	5	90	18	43	8	3	0	0	0	0	18	0
	V															
45	Visvéswar gali, ...	114	0	27	2	29	5	3	11	1	0	0	0	0	9	0
	U															
55	Unkareswar, ...	495	125	9	16	150	86	53	0	0	0	0	4	0	2	5
171	Udhopura, ...	387	47	24	13	80	16	48	0	0	0	0	10	1	0	5
146	Umrao Sinh bagh, ..	337	50	1	4	55	44	11	0	0	0	0	0	0	0	0
	sarak, ..	551	73	0	7	80	64	16	0	0	0	0	0	0	0	0
76	Unchí gali, ...	68	0	12	0	12	4	5	3	0	0	0	0	0	0	0

TABLE II.

Re-examination of several Mehalas personally, in the year 1829, with a view to ascertain the accuracy of the first Census, and to distinguish the Males, Females, &c.

Reference to Hindí Register.	Name of Mehala.	Inhabitants, in 1827-8	Inhabitants, in 1829	Europeans.	Proprietors. Men.	Proprietors. Women.	Proprietors. Boys.	Proprietors. Girls.	Total.	Lodgers. Men.	Lodgers. Women.	Lodgers. Boys.	Lodgers. Girls.	Total.
21	Ganésh Chameria gali, ...	344	672		103	110	35	25	279	172	136	49	36	393
25	Bhyronáth, ..	397	440		113	107	43	29	292	54	58	19	17	148
29	Bhátki gali, ..	387	290		131	101	9	9	250	15	24	1	0	40
31	Mádho Das Swami gali, ...	51	68		12	16	1	0	29	19	13	5	2	39
32	Raja Rám gali, ..	53	78		21	18	6	3	48	15	9	3	3	30
22	Siva Choudri gali, .	109	90		30	44	5	2	81	5	3	1	0	9
51	Rám ghát, ...	1577	1289		187	162	53	58	460	366	331	78	54	829
80	Nipáli Khapra, ..	195	204		29	36	15	7	87	50	47	13	7	117
85	Visvéswar gali, ..	114	93		45	20	4	1	70	11	7	4	1	23
81	Kachouri gali, ..	112	71		10	9	4	5	28	26	12	2	3	43
164	Bari Pírí mehala, ..	2601	2646		393	400	176	85	1054	619	642	201	130	1592
306	Shékh Salim phatek,	655	445		100	115	46	17	278	52	60	22	33	167
308	Bengalí tola, ..	1113	1163		157	248	39	30	474	250	353	47	39	689
206	Alipura, ...	670	692		149	182	93	58	482	73	86	26	25	210
382	Gulzár mehal, ..	159	164		42	52	22	15	131	11	13	6	3	33
380	Télia Nála, (in part)	147	160		46	25	4	8	83	23	31	9	14	77
43	Súnderdas ki Bagh (ditto,)	248	249		71	64	33	16	184	24	24	11	6	65
		8932	8814		1639	1715	588	368	4310	1785	1849	497	373	4504

Reference to Hindi Register.	Name of Mehala.	Inhabitants, in 1827–8	Inhabitants, in 1829	Europeans. Men.	Europeans. Women.	Europeans. Children.	Europeans. Total.	Proprietors. Men.	Proprietors. Women.	Proprietors. Boys.	Proprietors. Girls.	Total.	Lodgers. Men.	Lodgers. Women.	Lodgers. Boys.	Lodgers. Girls.	Total.
	Secrole & the Vicinity.																
439	Lachipura, (only once counted)	.....	435					129	131	71	61	392	17	21	3	2	43
440	Périapokhri, ...	.....	185					49	61	36	28	174	3	4	3	1	11
442	Nadéswar, ...	.....	1389					290	296	161	110	857	288	142	58	44	532
445	Orderly Bazar, ..	.....	1076					207	225	96	78	606	218	158	55	39	470
426	Déthúri, ...	.....	219					48	61	35	24	168	16	18	9	8	51
431	Chamrouti, ...	.....	1159					269	328	166	153	916	87	74	52	30	243
427	Grant Bazar, ...	.....	438					144	137	77	63	421	6	5	4	2	17
420	Sikror, (or Secrole)	.....	933					296	296	183	132	907	8	8	8	2	26
418	Peharpura, ...	.....	1115					368	249	214	137	1068	14	19	8	6	47
429	Khajri, ...	.....	984					343	326	172	113	954	12	11	4	3	30
418	Gangadhérkapura, ..	.....	232					75	77	51	29	232	0	0	0	0	0
419	Hugal ganj, ...	.....	274					105	116	67	44	332	19	13	7	3	42
422	Sadar Bazar in the Lines, ...	.....	898					281	217	133	95	726	62	58	25	27	172
			9337					2604	2620	1462	1062	7753	750	531	236	167	1684
	Siwpur, (males and females not specified)	.....	2051														
	Inpúr, ditto	.....	488														
			11876														
				Men.	Women.	Children.	Total.	Native Servants									
	Bangalos and houses of Europeans and Eurasians, including Military Staff,	.....	.....	54	41	51	146	1636	653	54	0	2343					
	Regimental Bangalows, ...	.....	.....	60	20	46	126	0	0	0	0	738					
	Troops in Cantonments, (with followers)	.....	.....	0	0	0	125	0	0	0	0	2880					
	Native Jail, ...	.....	.....	0	0	0	0	570	37	7	0	614					
	Lunatic Asylum, ...	.....	.....	2	0	0	2	98	18	0	0	118					
			7092				399					6693					
	Total inhabitants of Secrole, ...	.....	18968														

TABLE III.

CATALOGUE *of the principal* CASTES *and* TRADES *of the City of* BENARES, *as ascertained from the* Choudris, *or principal men of each Caste, or where such source was not available, from actual investigation.*

HINDUS.				
Bráhmans.		Number.	On whose authority.	Profession or occupation.
PANCH DRAVIR.				
Maháráshtr,	Dravir, ...	300	Ch,hanuji,	Pandits—Recluses, or Káshibáshi—and a few are Merchants.
	Tylang, ...	500	ditto,	
	Chitpaur, ...	3300	Bál Dikshit,	
	Yujúrbédí, ...	5000	Ragunáth Pant,	
	Raghurbédi, ...	755	Mór Bhat Kotwál,	
	Sanwai, ...	25	Appaji,	
	Kan no, ...	471	No Bhat,	
	Prabhu, ...	20	Trimbak Rao,	
	Kánharé, ...	400	Ch,hanuji,	
	Karháré, ...	475	ditto,	
	Abhir, ...	65	Ratanji and enquiry,	
		11311		
Nágar,	Bishan Nágari, ..	250	Nátho Rám,	Capitalists, lending money and jewels on interest.
	Barnagari, ...	500	ditto,	
	Ahmedabádi, ..	315	ditto,	
	Sathódara, ...	20	Ganésh Rám,	Servants.
	Sipahi, ...	70	Késwar Rám,	
	Prishnora, ...	51	Ratanji,	
	Chitrora, ...	25	ditto,	
		1231		
Mór,	Bhar Bedi, ...	71	Ratanji,	Fire-worshippers—Recluses—perform the duty of púja daily at temples, on stipend, for individuals.
	Chatur bedi, ...	175	Badri Shanka,	
	Agyarakshana, ..	17	Ratanji and enquiry,	
	Dhinouja, ...	61	ditto,	
	Chácher bedi Dhinouja, ...	33	ditto,	
	Tálujina, ...	13	ditto,	
	Raychandrjina, ..	17	ditto,	Some few Pandits, and Khyráti, or living on charity.
	Patni Chatur bedi, ..	27	ditto,	
	Puchhana, ...	37	ditto,	
	Gulákhna, ...	100	ditto,	
	Lorha Bhantána, ..	16	ditto,	
		567		
Údich,	Sahsr, ...	700	Enquiry,	From the Doab.
	Tolakia, ...	125	Baluji Rugunathji,	
	Bagria, ...	80	Ratanji,	
	Kham Bhaeti, ..	72	ditto,	
	Anter bedi, ...	100	ditto,	
	Máthabi, ...	23	ditto,	
	Surati, ...	23	ditto,	
	Modaru Surati, ..	23	ditto,	
		1146		

Bráhmans.		Number.	On whose authority.	Profession or occupation.
Mewára,	Bhat, ...	176	Ratanji,	Khyrati, Noukari, and Gumashtagi.
	Marosí, ...	7	ditto,	
	Triwári, ...	7	ditto,	
	Dungurpúra Bhat, ..	80	ditto,	
	Sarvari, ...	63	ditto,	
	Maluvi Brahmans, ..	75	ditto,	
	Baródara, ...	23	ditto,	
		430		
Khérewál,	....	1000	Surajnáth Dubé,	The greater part are Merchants—some live on charity, &c.
	Kharanja, ...	100	Ratanji and enquiry,	
	Balmik, ...	11	ditto,	
	Púshkarnia, ...	90	Moti Lál,	
	Disáwal, ...	55	Ratanji and enquiry,	
	Sri Máli, ...	250	ditto,	
	Jambú, ...	19	ditto,	
	Nasmdeo, ...	16	ditto,	
	Raikwál	19	ditto,	
	Choubisa, ...	27	ditto,	
	Palliwál, ...	83	ditto,	
		1670		
Puch,hna,	Srímalí, ...	77	ditto,	
	Bishen nagarí, ..	87	ditto,	
	Jharula, ...	77	ditto,	
Nandora,	....	45	Ratanji,	
Karsora,	....	27	ditto,	
Udambwar,	....	21	ditto,	
Kharachata,	....	27	ditto,	
Bhárgava,	....	70	ditto,	
Kamloja,	....	81	Ratanji and enquiry,	
Rorwalu,	....	35	ditto,	
Parbháskar,	....	37	ditto,	
Raithélu,	....	45	ditto,	
Samora,	....	55	ditto,	
Gugalú,	....	18	ditto,	
Motalu,	....	57	ditto,	
Tapodhan Bharaí,	.... ..	12	ditto,	
Nardík,	....	17	ditto,	
Sanáwar Gopálí, ..	.... ..	57	ditto,	
Medípurna,	....	26	ditto,	
Líkna phutkal,	.. ..	16	ditto,	
Bhojak,	....	12	ditto,	Parohits and Pujèris of the Jyn religion and of the Oswáls.
Bansí	....	87	ditto,	
Jharula,	....	70	ditto,	
		1056		
PANCH GAUR.				
Kán-kubj	Brahmans, ...	1500	Bidhya Dhar,	Of various professions; none very rich.
	Sarwaria, ...	4500	Ganésh Datt,	
	Sanouria, ...	575	Chakan,	
	Jijautia, ...	27		
		6602		

Bráhmans.		Number.	On whose authority.	Profession or occupation.
Gaur,	Srí Gaur, ...	20	Ganésh Datt,	Employed as cooks by the Váishyas and Brahmans: some few Gomashtas or Merchants.
	Adi Gaur, ...	1500	Sita Rám,	
	Srí Gaur Marwarí, ..	35	Ratanji,	
	Gaur, ...	150	ditto,	
	Hirania, ...	75	ditto,	
	Kirtnia, ...	36	ditto,	
	Biréswar wala, ..	39	ditto,	
	Silujana, ...	57	ditto,	
	Girnaria, ...	7	ditto.	
		1919		
Athbansí Sáraswat, ...		200	ditto,	Parohits of Kshetrís.
Maha brahmans, ...		250	Debipersád Chaubé,	Inherit the effects of all Hindus except Oswals.
Ganga putrs, ...		1000	Enquiry,	Attend bathers, &c.
Bengali brahmans, ...		3000	Antnarain Bhattacharj,	Kashibash.
Shákal Dwípí, ...		300	Ratanji,	Various.
Panchnadea, ...		200	ditto,	Ghat-waiters.
Kashmírí, ...		200	ditto,	Writers.
Ch,henáth, ...		900	Lachman Joshi,	Reside in Rajmandil—chiefly servants.
Soní, ...		11	Enquiry,	Goldsmiths.
Parbatí, ...		125	Kashináth,	Various.
Mathuria Choubé, ...		26	Gobind Chand,	Khyrati.
Khandua, ...		31	Ratanji,	
		6243		
KSHETRIS.				
Rajputs, ...		6160	Shiwsahay Sinh,	Service—wire-drawers, &c.
Bhuihars, ...		5000	Enquiry,	call themselves Brahmans—Cultivators.
Oswál, ...		294	Gopi Chand,	
Khatrí,	Lahorí, ...	1400	Bakhtaur Lal,	Brokers, Cloth Merchants, and Servants.
	Púrabi, ...	648	Ch,hotù Lal,	
	Bávanjai, ...	400	Enquiry,	
	Panchjotí, ...	200	ditto,	
	Barehjati, ...	150	ditto,	
Sisoudia,	Rajputs, ...	40	ditto,	
		14292		
VAESYA.				
Agarwála, ...		2000	Ratan Chand,	Merchants.
Kasrwáni, ...		2100	Babù Lal,	Tradesmen.
Mahéswari, ...		150	Ramnarain,	ditto.
Bisanágar Bania, ...		160	Makhan Lal,	Gomashtas or mercantile agents
Dasanágar Bania, ...		100	ditto,	
Disával Dasa Bania, ...		750	Gokul Das,	
Disával Bísa Bania, ...		80	ditto,	
Mor Dasa Bania, ...		183	Bangati Das,	
Lanr Dasa Bania, ...		75	Enquiry,	
Patél Gujarátí, ...		125	Chunu,	
Símáli Soní, ...		200	Manu Lal,	Goldsmiths.
Bhátia, ...		214	Sewpersád,	Brokers to ditto.
Parvál, ...		50	Enquiry,	ditto.

Bráhmans.		Number.	On whose authority.	Profession or occupation.
Rora,	....	700	Enquiry,	Shop-keepers.
Aumar,	....	155	Bhola Chaudri,	ditto.
Kasaundhan,	....	90	Jagan,	Utr distillers.
Bengali,	....	200	Chandnarain Bh:	
Jharula,	....	76	Enquiry,	
Sunrí,	....	16	Debi Dyal Chaudri,	
Bandrwár,	....	14	Badlu Chaudri,	
Rastokí,	....	40	Damudar Das,	
Bhát,	....	800	Ch,hakan Lal,	Khyrati.
Gujaratí Bhat,	....	22	Enquiry.	
		8300		
SUDRAS.				
Bengali,	Baéd, ...	200	Ojan,	Physicians.
Kaeth,	Shribastab, ...	5000	Siw Gholám,	Writers, &c.
	Ashthána, ...	250	Enquiry,	
	Gour, ...	72	Lala Murlí Dhar,	
	Saksena, ...	40	Ganpati Lal,	
	Bhat Nágar, ..	55	Lala Murlí Dhar,	
	Mathar, ...	13	ditto,	
	Bengalí, ...	1500	Chandrnarain,	
Sathia,	....	150	Enquiry,	Surgeons and Oculists.
Darzí Sríbastab,	... ..	900	Sahay,	Tailors.
Dhobi,	....	800	Nakú Jag,	Washermen.
Ahir,	....	5250	Bhai Rám Goordial,	Cowherds.
Ját,	....	54	Enquiry,	
Kaséra,	....	1300	Sita Ram,	Braziers.
Koeri,	....	8351	Fakir Sanoki Chaudri,	Gardeners—Farmers.
Ditto,	allahabadí, ..	100	Enquiry,	
Kahar,	....	5000	Sewpersád Chaudri,	Bearers,
Kunbí,	....	600	Murlí Dhar,	Servants.
Mallah,	....	1500	Mehgú,	Boatmen.
Kalwár,	....	6600	Ganésh Choudri,	Distillers.
Telí,	....	2500	Mohan Choudri,	Oilmen.
Telí,	diliwál, ...	1200	Lachman Phé,	
Telí,	bengalí, ...	100	Chundnaráin,	
Tamolí,	....	1200	Baboo Lal Choudri,	Sellers of Pawn.
Halwaí,	....	1500	Khaderu,	Confectioners.
Khatik,	....	400	Ganpat and Persad,	Fruiterers.
Sonar,	purabia, ...	1100	Dulam,	Goldsmiths.
Tara Gaur,	soni, ...	30	Enquiry,	
Mera Soni,	jypurí, ...	50	Khushial,	
Karía,	sonar, ...	60	Enquiry,	
Lohar,	kanouji, ...	1800	Mol Chand,	Smiths.
	parabia, ...	100	Harak Chand,	
Barhi,	....	900	Hichha,	Carpenters.
Kharádí,	....	194	Sital,	Turners.
Lahera,	....	300	Enquiry,	Workers in Lac.
Lahera churí wala,	.... ..	60	Badlu,	Lac Bracelet-makers.
Patwa,	....	400	Enquiry,	Threaders of Beads, &c.
Tantí pitambar baph,	.... ..	260	Sitaram Chaudri,	Silk Weavers.
Khatrí Gota baph,	.... ..	75	ditto,	Lace Embroiderers.
Sarkí wala,	....	14	Enquiry,	Ear-ring Makers.
Mochí,	....	500	Bisesvar,	Shoemakers.
Híratarash bundalkhandí,	..	95	Khaho,	Diamond Cutters.
Nau sríbastab,	....	850	Ram Baksh,	Barbers.
Nau paehian,	.... ..	12	Bisesvar,	
Nau gujarati,	....	30	Enquiry.	

SUDRAS.	Number.	On whose authority.	Profession or occupation.
Kasbi khangí, or Ramjani, ..	1500	Enquiry,	Courtezans.
Ditto, ghungruband, ..	264	Sankat Ram,	Nach girls.
Kathak, ...	118	Siw Sahay,	Music and Dancing Masters.
Bhunja Kanoujia, ...	556	Ramjiawan,	Sellers of parched grains.
Kandu, ...	1200	Ghinhu,	Ditto.
Gadaria, ...	350	Gajjan,	Shepherds.
Bharéria, ...	395	Ganpat,	Brahman beggars.
Kumhar, ...	700	Enquiry,	Potters.
Ditto Gadha wala, ...	37	Kishun,	Brick-makers.
Lonia, ...	400	Gulu,	Salt-makers, Builders of mud walls, &c.
Bénu Bansi, ...	125	Enquiry,	Cane workers.
Chhípí, ...	160	Anant Rám,	Chintz printers.
Sirkí Walé	35	Kishun,	Thatchers.
Barí, ...	415	Lachman and Sankar,	Link boys.
Chumar, ...	1850	Khadéru,	Leather workers.
Kutta Chumar, ...	180	Krishna,	Silk-dyers.
Thuwai, ...	30	Ganésh Das,	Silk-workers.
Laru Marhattá, ...	4	Panru,	Shoe-makers,
Dóm, ...	213	Babu Lal,	Corpse-dressers, eaters of dead animals, &c.
Tarí wala pasí, ...	96	Jéwan Chaudri.	Toddy sellers.
Mochí Dekhaní, ...	50	Rama	Carriers.
Dabgar, ...	76	Bakshu Chaudri,	Leather vessel makers.
Kanjar, ...	33	Enquiry,	Rope-makers.
Dharkar narsinha wale, ..	50	Rám sarak,	Cane-workers.
	60302		
HINDU FAKIRS.			
Dandi, ...	700	Enquiry,	Live on charity.
Jatti, ...	22	ditto,	Jyns.
Kanphata, ...	38	ditto,	Attend at Bhyronath temple.
Kabírpanthi, ...	40	ditto,	Have land in Goruckpoor.
Naniksáhi, ...	1000	ditto,	Sikhs.
Ramanandi, ...	2500	ditto,	
Sanyasi, ...	2500	Motígir Kotwál,	Mostly Gosain merchants.
Dravir Sanyasi, ...	50	Kumar Swami,	
Lingía, ...	106	Enquiry,	Take all offerings to Mahadeo.
Jangam, ...	16	Jangambari Mahant,	Go about with cows and bells.
Aghorí, ...	200	Enquiry,	Naked outcasts.
	7171		

MUSELMANS.

Professions.	Number.	On whose authority.	
Raís, Shékh, Seid, Moghel, Patán, &c, ...	10000	By estimation,	Persons of independent fortune.
Juláha, ...	10000	Wali Sah Mohamed, confirmed by enquiry,	Weavers.
Ghalla wala Trilochani, ..	1000	Muradan,	Grain Merchants of Trilochan.
Mali, ...	62	Kinga,	Gardeners.
Kunjra, ...	325	Ramzani Chaudri,	Green grocers.
Darzi, ...	700	Sahay,	Tailors.

Professions.		Number.	On whose authority.	
Dhobi,	dilewal, ...	80	Imam Baksh, Pírbaksh,	Washermen.
	benaresi, ..	100	Budhu Choudri,	
Kasbi,	khangi, ...	1212	Enquiry,	Courtezans.
	ghungruband, ..	500	ditto,	Dancing girls.
Jarrah,	....	225	ditto,	Surgeons.
Dafali,	....	200	Bakhshu,	Musicians.
Hijra,	....	50	Enquiry,	Eunuchs—take fees on births.
Atashbaz,	....	200	Babu Khán & Séra Ch:	Fire-work makers.
Rangréz,	....	475	Bakshan Choudri,	Dyers.
Halál Khor,	....	900	ditto,	Scavengers.
Hakak,	....	112	Karman,	Gem polishers.
Moharkhand,	....	25	Rajab,	Engravers.
Sikligar,	....	71	Imambaksh,	Metal polishers.
Kundigar,	....	75	Míran,	Wire flatteners.
Kalabatun walé,	.... ..	28	Enquiry,	Gold and silver lace makers.
Lohar,	....	50	Rajab Ali Mukarband,	Blacksmiths.
Kheradi,	....	50	ditto,	Turners.
Chúri walé,	....	300	Zia Ullah,	Cutlers.
Mochi,	jindaz, ...	105	Madar Baksh Choudri,	Saddlers.
	jutiwala, ...	212	Behadur Choudri,	Shoe makers.
Kasai,	bara, ...	354	Mihter Bhangar,	Butchers.
	ch,hota, ...	250	Titu and Benaresi,	ditto.
Nán Bai,	....	130	Pír Mohamed Choudri,	Bakers.
Sabon walé,	....	41	Subhani Choudri,	Soap sellers.
Satrinji walé,	....	63	Ramzani,	Makers of Setrinjees.
Bhatteara,	....	381	Khanu and Jumani,	Servants in Serais.
Galicha walé,	....	52	Bechan Choudri,	Carpet makers.
Bihisti,	....	180	Ch,hedi Choudri,	Water carriers.
Intpaz,	....	173	Gausi and Madari,	Brick-makers.
Nycha band,	....	62	Nur Mohamed,	Hookah-snake makers.
Dhunia,	....	100	Enquiry.	Cotton spinners.
Madari,	....	20	ditto,	Snake catchers.
Rafugar,	....	233	Mir Fazl Ali,	Shawl menders.
Tarke ch,háta walé,	.... ..	18	Phénku Bádkash,	Umbrella makers.
Chylodar,	....	9	Parásahi,	
Niaria,	....	125	Karm Khán,	Refiners.
Chabuk Sawar,	.. ..	200	Enquiry,	Grooms.
Raj,	....	300	ditto,	Bricklayers.
Kahar,	....	200	ditto,	Bearers.
Fakirs—(there are 80 Fakirs and 6 Sirdars,	....	500	Enquiry at each takia,	
Chandál,	....	700	Madari Choudri,	Outcasts.
		31248		

Abstract of the Castes and Sects in the foregoing Catalogue.

HINDUS.				Number.
Brahmans,	Maharáshtr,	....	11 denominations.	11311
	Nágar,	....	7 ditto,	1231
	Mar,	....	11 ditto,	567
	Udich,	....	8 ditto,	1146
	Mewari,	....	7 ditto,	430
	Khéréwal,	....	20 ditto,	2068
	Kan-kubj	....	4 ditto,	6602
	Gaur,	....	10 ditto,	1000

HINDUS.		Number.	
Brahmans, Bengali,	1 denomination.	3000	
Gangaputr,	1 ditto,	1000	
Twenty-seven less important sects,		3026	
			32381
Kshétris, Rajputs,	2 ditto,	6200	
Bhuihar,	1 ditto,	5000	
Khetri,	6 ditto,	3092	
			14292
Baesyas, or Bunyas,	22 ditto,	8300	
Sudras, including sixty-nine professions,		60302	
Hindu Fakirs,	11 ditto,	7171	
			75773
MUSELMANS.			
Gentry, or Raís,		10000	
Forty-four professions and trades,		20048	
Fakirs and Chandáls,		1200	
Hindu population,			122365
Muselman ditto,			30248
Add for children not estimated by the Chaudris, and for visitors and unavoidable omissions,			26387
Population of the City, as by the Mehala Census,			180000

TABLE IV.

Annual consumption of several Articles of Food, upon which Town duties are levied in the City of Benares, extracted from the Custom-house returns.

ARTICLES.	1824.	1825-6.	1826-7.	Average.
	Maunds.	Maunds.	Maunds.	Maunds.
Ghí,	16500	17400	13100	15700
Tobacco,	13900	12600	15100	13800
Beetlenut,	1500	1200	2500	1700
Turmeric,	1900	2200	2400	2200
Sugar, dry,	4700	5000	3300	4300
Sugar, wet,	3600	2200	3300	3000
Jagrí,	12300	2400	9400	8000
Molasses,	12800	6700	16400	11900
Oil,	1900	1100	1800	1600
Oil Seeds,	15400	8700	4400	9500
Salt, Lahori,	33	349	229	200
Sámer,	10736	9738	13336	12270
Bálamba,	5266	5636	7354	6080
Sálamba,	1980	915	1312	1400
Soehar,	115	195	134	150
Bobcha,	6	12	25	15
Khári,	2	147	4	50
Total of Salt,	18000	17000	22500	19200
	Rupees.	Rupees.	Rs. farmed.	
Gross amount of Town duties collected, deducting the expence of collection,	52000	53000	70000	

TABLE V.

Price Current of Grain, &c. in the City of Benares, from the year 1209 to 1229 Fasli.

	Year. 1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229
	md. sr.	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*	*md. sr.*
Wheat,.	1 0	1 5	0 35	1 5	0 32½	1 5	0 36	0 32½	0 26	0 29	0 30	0 35	0 32½	1 5	1 10	0 33¾	0 17	0 19	0 30	0 35	0 35
Dhal,..	0 25	0 37½	0 27	0 30	0 37½	0 37½	1 0	0 28	0 15	0 26	0 26	0 32½	0 35	0 32½	1 2½	0 35	0 16½	0 15	0 28	0 37½	1 0
Barley,.	1 15	1 17½	1 0	1 10	1 10	1 25	1 5	1 0	0 30	0 35	1 15	1 10	1 6½	1 20	1 27½	1 12	0 28	0 28	1 0	1 20	1 20
Paddy,.	1 20	1 5	1 0	1 11¼	1 0	1 15	1 7½	0 35	1 0	1 5	1 0	1 18	1 0	1 10	1 25	1 0	0 24	1 0	1 0	1 10	1 2½
Boot Gram,..	1 12½	1 16¼	1 2½	1 1¼	0 33¾	1 17½	0 15	1 0	0 32½	0 35	1 1¼	1 7½	1 2½	1 15	1 5	1 5	0 25	0 25	0 31¼	1 12½	1 12½
Kodo, ..	2 0	2 0	1 10	1 5	1 0	2 0	2 0	1 10	1 0	1 10	1 10	1 20	1 30	2 0	2 5	1 20	0 35	1 0	1 20	2 10	2 0
Jowar, .	1 12½	1 22½	1 5	0 36	1 10	1 12½	1 15	0 31¼	0 35	1 5	1 5	1 0	1 7½	1 20	1 35	1 5	0 22	0 35	0 32½	1 20	2 0
Bajrah,.	1 0	1 0	0 35	0 35	1 0	1 10	0 35	0 32½	0 24	0 28	0 35	0 35	0 36¼	1 5	1 20	0 35	0 20	0 21	1 0	1 5	1 5
Merwa,.	1 25	1 30	1 10	1 15	1 20	1 30	1 25	1 20	0 35	1 5	1 15	1 25	1 20	1 32½	1 37½	1 15	0 35	0 35	1 12½	2 0	1 35
Jagrí,..	0 22	0 23	0 16	0 19	0 22	0 16	0 12	0 20	0 19	0 21	0 22	0 18	0 18	0 17	0 20	0 15	0 10	0 15	0 10	0 15	0 15½
Oil,.....	0 9	0 6½	0 5	0 10	0 9	0 11	0 7½	0 9½	0 5¼	0 4	0 5	0 8	0 7	0 8¼	0 8¼	0 4½	0 3½	0 4	0 5½	0 5	0 4½
Ghí, ..	0 3¼	0 2¾	0 2⅓	0 2½	0 3	0 2¼	0 3	0 2½	0 2¾	0 2¼	0 2	0 2½	0 2½	0 2¾	0 2½	0 1¾	0 1¾	0 2¼	0 2¼	0 1¾	0 1 13/16

R. N. C. Hamilton, *Magistrate Benares.*

VI.

JOURNEY

ACROSS THE

PÁNDUA HILLS, NEAR SILHET, IN BENGAL.

By H. WALTERS, Esq.

Left *Dacca* on the night of the 19th October 1828, and passed through an uninteresting inundated country, with scattered villages stuck on little islands, which barely sufficed to keep the people's heads above water. At day light, on the 26th, arrived at *Chatak*, and breakfasted with Mr. Inglis, a respectable lime merchant. The *bangalo* is situated on a pretty little hill, close to the river *Súrma*. This place is about a day's journey from *Silhet*. Started at eleven, and crossed the *Hauras* to *Pandua*. The *Hauras* are extensive *jhíls* or lakes covered with reed and rose jungle, having open expanses of water, many of them a mile across—while in other places the jungle is so thick it is with difficulty a boat can be impelled through it. The depth of water is, in many places, ten or twelve feet. They extend for many miles along the foot of the hills. In the dry season, the water runs off, and leaves an extensive waste, to be occupied by buffalos and tigers, and the *Barasinga*, or large *Silhet* stag, having six distinct

branches or projections from each horn. Reached *Pandua* at sunset. It is situated immediately under the hills, and is in fact the frontier village. Here is a small fort, and a company of Sepoys to keep the hill people in check. From hence the *Cásias* obtain their rice, cloth, salt, and in fact all the necessaries of life, in exchange for honey, wax, oranges, cinnamon, betelnut, &c., the produce of their hills.

27th. After some trouble succeeded in making a start at about eight A. M., my baggage and tent carried by about twenty *Cásias*, and myself mounted on a pony. At nine reached *Ramsing's* house—where a tent was pitched. Observed a forest tree, covered with a very large description of green caterpillar; a native with a bow and arrow, was keeping watch, and driving off the birds, to prevent the destruction of the insects. These caterpillars produce a coarse kind of yellow silk, called "*Múnga*," from which cloth is made by the *Cásias*. When they have devoured the foliage of one tree, (as they had nearly done of this) they are carefully removed to another. From hence the ground begins to rise. Passed along a tolerable path, through a grove of orange and areca trees,—crossed the bed of the *Pandua Nala* three or four times, over sand and round stones—now began to ascend in earnest. Proceeded through groves of orange and citron trees, loaded with fruit, interspersed among the broad-leaved plaintain and stately betel, with an underwood of flowering shrubs, and the prickly pine-apple obtruding its fruit across the path. Nothing can be more beautiful than these cool and shady groves, soothed by the murmurs of distant torrents, and refreshed by numerous crystal streams. A group of *Cásia* women passed by, bearing at their backs conical baskets, suspended from their foreheads by bands of matting, and heavily laden with lumps of smelted iron ore. My baggage was carried in the same manner. The women are the best porters, and young boys and girls also bear their appropriate loads.

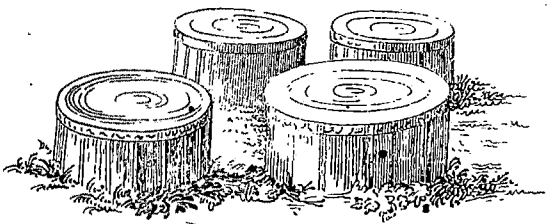
The *Cásias* are a stout athletic race; fair, as compared with the inhabitants of the plains, and with muscular limbs. They are devoted to chewing *paun* and betel, very fond of spirituous liquor, and eat and drink whatever comes in their way. In religion they follow some of the *Hindu* customs. They have no written character, and their language is different from that of the *Garos* and other surrounding tribes; though they all appear to be but different dialects of the same original language. Theft is unknown among them, and they are true to their word. In moral character, they tower, like their mountains, over the natives of the plains. They always go armed either with bows and arrows, or long naked iron swords. Their houses are raised on posts about four feet from the ground, with a flooring of bamboos, and are well boarded, and secured all round from the rain and cold. The men, women, and children live above, and the pigs, fowls, and the rest of the family, inhabit the lower apartment, and take care that nothing is wasted. Their houses are surrounded by yards fenced with neat stone walls; and the villages are usually erected on the side of a hill, the houses rising one above another. Property descends to the nephew of the occupier, by his sister. They are governed by numerous petty Rajas, who exercise but little control over them. On all occasions of importance, the Queen Mother, and the elders of the tribe, are consulted, and nothing can be done without their consent. Their pigs are a small handsome race, like the Chinese; their cattle large and sleek, and in good condition, the pasturage on the hills being excellent.

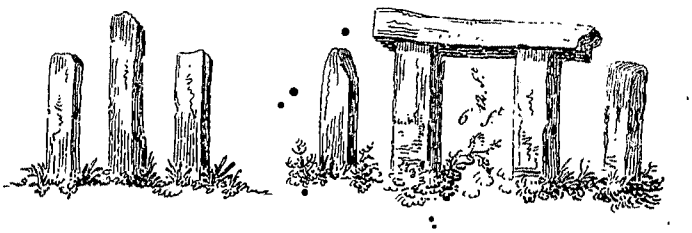
Ascending by a stone causeway: at ten reached the first stone bridge, over a mountain torrent, in a beautiful secluded spot. A single stone slab, of large size, at least twelve feet long, forms the bridge, having four upright stones at the corners. The torrent rushing over the rocks immediately under it, is received in a rude bason full of large fish. The

rocks are of limestone. Beautiful flowers and creeping plants, ferns and mosses, invite attention at every step.

Here a very steep ascent commences, and continues till a landing place is reached, shaded with trees, whence branches off the road to the village of *Supar-Punji*. This road descends into and crosses the valley. Passed over three or four stone bridges of small size, and one of bambu—the scenery secluded and beautiful. Ascended a very bad road, and a very steep fall, at an angle of forty-five in some places. Succeeded in reaching the village at half-past eleven A. M. The village is stockaded and defended by a "cheval de frize" of sharp-pointed bambus. Obliged to pitch my tent on a level space inside, under the shade of some beautiful trees, commanding a superb view of the mountain glen, the overhanging precipices, and the plain below. Under these trees are some two or three hundred monuments, large and small, all formed of circular solid stone slabs, supported by upright stones set an end, which enclose the space below. They vary from two to six and eight feet in diameter, and are disposed on the side of the hill all close together, producing a singular effect. On these the villagers sit on occasions of state, each on his own stool, large or small, according to his rank in the commonwealth. These are, in fact, however, tombs. The dead bodies of the *Cásias* are burned on a spot set aside for the purpose, a little higher up the hill, and their ashes are collected and put into earthen pots, which are deposited under the stones. I saw several of these pots by looking through the interstices of the stones. As it happened, a dead child was brought out of the stockade by its mother and female relations, who made a dreadful howling. They placed it in a sort of wooden cradle prepared in the place of concremation, and after fire was placed under it, retired to the village. A Priest then mumbled some prayers, while the dogs and pigs fought for the plantains, oranges, and green betelnut, which had been offered on the occasion, and would doubtless have fought for

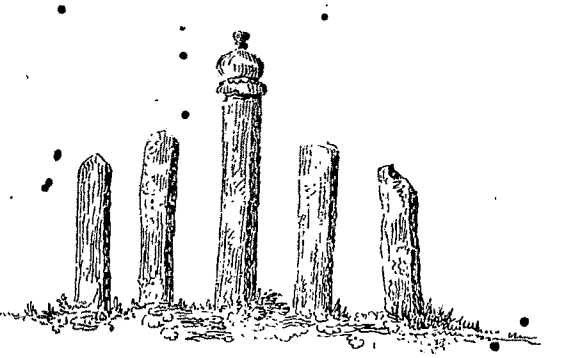
Stone Seats at a Kasya Village.
2 to 6 ft. Diam.



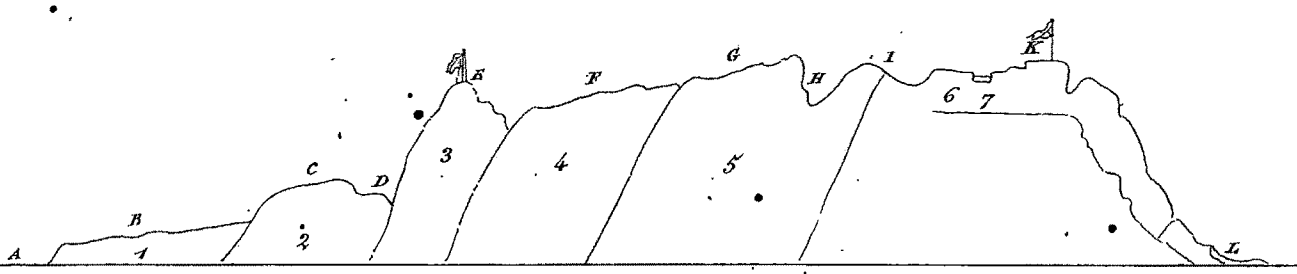


Kasya Monumental Stones.

Bellows used in Smelting Iron



Section of the Pandua Hills



A. Plain of Assam.....125 ft. above the level of the Sea
B. Angrugi.....1090 ft. elev.
C. Mopuxa.....2746 "
D. Bed of Surjpani R.....2320 "
E. Nanklao.....4520 "
F. Langbri.....5914 "
G. Moiplang.....5942 "
H. Baga pani or Sufeid R. 4877 "
I. Saruram
K. Cherra Punji.

1. — Hilly covered with Jungle decomposed Granite.
2. — Open & hilly with fir trees — Granite
3. — Fir; Larch and apple trees Granite boulders.
4. — Trees stunted; disappear altogether towards the South. red micaceous slate.
5. — Blue slate — no trees, except about the Baga pani.
6 — Sandstone — flat and often bare

the roasted child also, were he not too hot for them. The people looked on with the most perfect indifference—the father, a stupid looking brute, stood chewing his *paun*. In the evening, in strolling through the village, to the west end, I had a fine view of the great waterfall which runs over the table ledge of the mountain, and forms an upper and lower fall of altogether not less than one thousand five hundred feet. By going up a very steep ascent, and winding through the upper *Punji* or village, the bottom of the fall was approached, so that I got wet with the spray. Across this torrent, they told me, is the road to *Cherra-Punji*; but it is evident that it is impossible loaded coolies can cross it; indeed it would be difficult for any one to do so. It is a noble fall, and well worth coming out of the way to see. I learnt moreover, that further on ravines are crossed by monkey bridges, formed of two or three bambus tied together; so that in fact I had come the wrong road, and had to retrace my steps to the landing place before mentioned, notwithstanding what the *Cásias* said to the contrary. Information was brought me in the evening, which led me to think the *Supar-Punji* people had some design in bringing me to their village instead of taking me the usual road, and I thought it possible, as I was completely in their power, inside their stockades, that I might have some trouble in making my escape.

28th. Rose by moonlight this morning, and without disturbing the people, quitted the village. Accompanied by two servants, I soon found my way to the bottom of the valley, and ascending the hill on the opposite side, reached the landing place before mentioned, in time to see the sun rise in all its majesty. At seven A. M. reached the great stone, or rather rock, at the foot of the "*Mahadeo ki Cherti*," which commands a glorious view of the valley and plain below. After resting, proceeded to climb the ascent, almost perpendicular, and at eight reached the first stone door at the top of the hill, the great stone door at twenty minutes to nine, and the village of *Masmae* at nine A. M. The scenery from

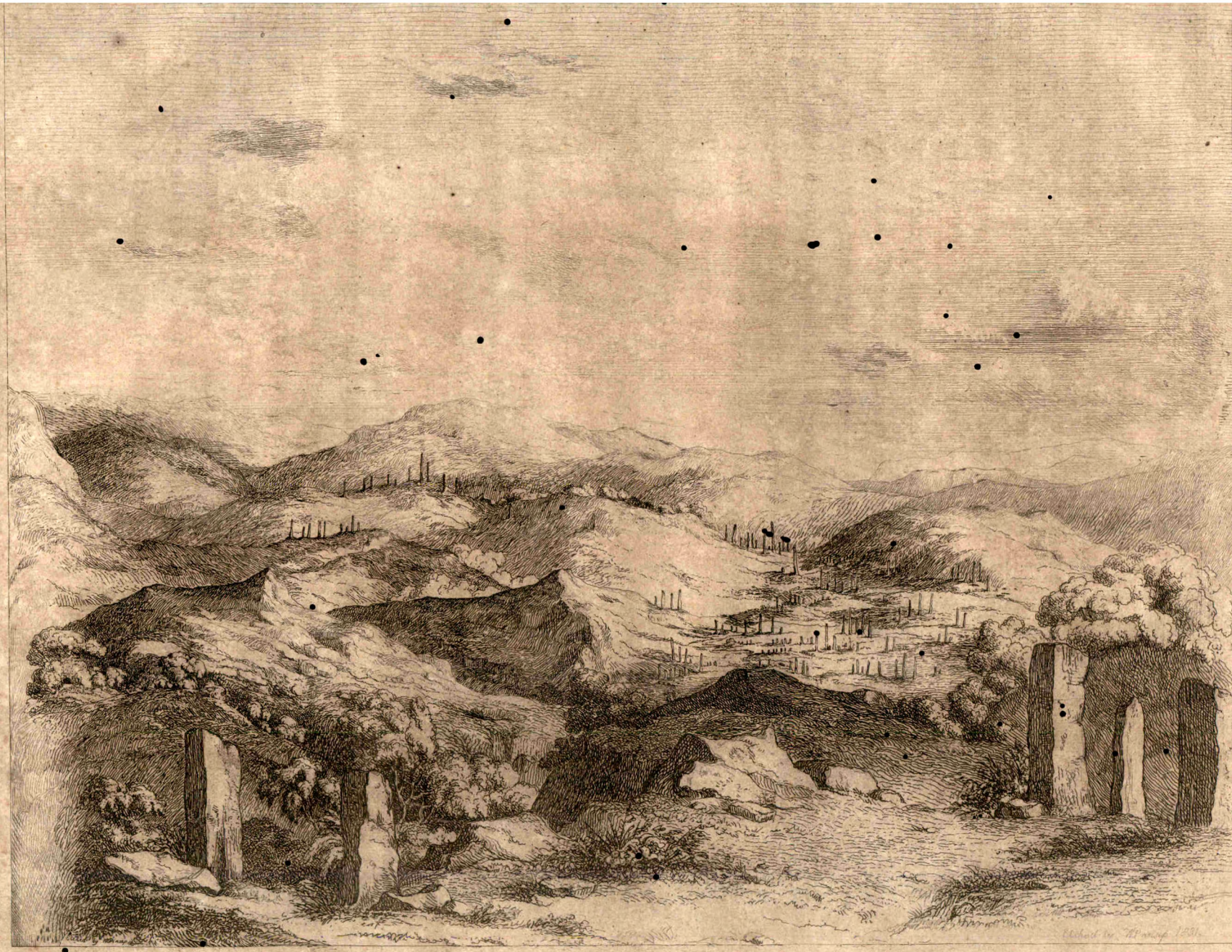
the crest of the mountain is beautiful, and very extensive—but the view from the table rock overhanging the glen, and the village of *Supar-Punji*, is magnificent. The mountain forms a horse-shoe, the top perfectly flat, and the sides quite perpendicular, like a wall, so that I actually sat with my legs hanging over it, and admired the water tumbling over the rock in the centre of the horse-shoe. Had I fallen, I must have gone through a space of at least one thousand feet, before a friendly tree would have stopped my progress. The uprights and stone doors are monuments to the memory of departed Rajas and Chiefs, some of them are wonderful works, resembling those of "Stone henge" in construction, and vying with them in magnitude. The gate mentioned above is about twelve feet high, and is formed of very large single slabs of stone—one slab that I afterwards saw, a circular stone, measured twelve feet in diameter by about two feet thick, and was raised four feet from the ground, some of them must weigh thirty tons at least, and are often brought from a distance. These monuments are found near all the villages on the hills. I observed some upright slabs of granite that stood at least twenty feet high from the ground. They are detached from the rock by means of fire; and four or five hundred men combine to convey and set them up on the death of any famous Chief. They mark and immortalize the family as well as the individual, and are held in great reverence by all the people. When a descendant dies, a feast is made of two, three, or four bullocks, according to the man's means, and the bullocks' heads are tied to the top of the stone, as a memento of the importance of the individual. I observed several tied up in this way. From *Masmae* to *Cherra-Punji*, the road is pretty level, till the latter village is approached, when a considerable hill must be ascended. Found a tent and two good huts at *Cherra*. It is proposed to establish a Sanitarium at this place, for English soldiers and sick people, from *Calcutta*, &c. The elevation is about five thousand feet above the level of the sea. The air is cool, light, and refreshing; and although the sun is hot, it is innoxious. The hill is free from jungle,

covered with fine pasture and flowers, but rocky—and the ravines filled with trees and shrubs—I can almost fancy myself on the top of *Bannerdown!* The range of hills runs east and west. The view over the plain is most extensive. I should think the eye, at one glance, must take in a semicircle of fifty miles at least—*Chatak* and *Silhet* are visible, and the course of the *Súrma* to a great distance.

Thursday 20th.—Started at half-past five, and at half-past eight reached *Surarím*, the first village—passed over a coal region, the coal cropping out of the ground—road tolerable so far. Here iron-smelters reside—entered one of the forges, the bellows are curious, and are worked by women, who stand on the top, and move them with their feet; the furnace is made of clay, hooped with iron; the ore is broken into small pieces, and put into the furnace with charcoal—the iron melts and runs out at the bottom, it is then taken up and cut into large lumps for exportation to the plains. It is very good, and is used for all purposes in this part of India. The country is bare and open, and the rocks of sandstone. The iron ore is collected in the streams below. Proceeded along the edge of a mountain, the path not two feet broad, and a tremendous precipice yawning beneath. The view of the valley and distant glens and mountains is most sublime—descended through a beautiful glen amidst tall strait trees, with numerous flowers and shrubs, and soon reached the first stream—crossed on stones—a beautiful spot. Ascended to the top of the opposite hill; the road very rugged and steep; the valley altogether is the most picturesque and beautiful I ever saw,—large masses of rock, the strata, perfectly horizontal, stand out from amidst the foliage, while hurled beneath are huge fragments having the strata perpendicular. Reached the top of the hill about eleven; from hence the road is tolerable. Reached the top of the "*Zeber Pahar*," and looked down on the *Kála* and *Safed* rivers—a glorious view—on the right a beautiful water fall, the source of the former river. Crossed the *Kala Páni*. Reached the *Safed*

or *Boga Pani*. The road lay over broken fragments, or rather huge masses of rock, along the bank. Crossed over a bridge made of a few sticks tied together, the water dashing among the rocks beneath; the river at present is about a hundred feet wide, but after rain it swells prodigiously; the bed of this river is four thousand eight hundred and seventy-seven feet above the level of the sea, by barometer. The water is quite white, as if mixed with fine white sand, though when taken up it appears perfectly clear. The water of the other river, at the same time, appears quite black, from its rocky bed. Ascended a long, steep, difficult and fatiguing hill by regular stone steps, some of them loose, and at half-past two arrived at *Moiplong*, after a very hard day's march—distance about fourteen miles. *Moiplong* is five thousand nine hundred and forty-two feet high, and is the highest range in the journey. The rock is a blue slate; there are no trees, except about the *Boga* or *Safed Pání* where I observed the first *firs*, small and stunted. The ground is covered with flowers and shrubs, strawberries, raspberries, dandelions, thistles, &c.

Friday 31st.—At day-break, thermometer 50. Started at five A. M.—road, hill and dale, with one steep descent, and little streams here and there, the vallies *stiff* and *white* with *hoar frost!* the first I have seen since leaving *England* fifteen years ago. There is always a difference of at least ten degrees between the plains and the tops of the hills. In November 1827 the thermometer stood at twenty-one, in one of these vallies. Crossed a good sized plain with cultivation, and then a steep ascent brought me to the summit of the hill, which overlooks the plain *Siang*. Passed several beds of quartz, and collected some specimens; no trees to be seen, but fine pasture, and numerous flowers—fine plains and high round hills, some conical. Left the village of *Siang* on the right, on the top of a ravine, with trees, at about a quarter after eight. This is not a friendly village. Tolerable road with soft black soil, and occasional bogs. Arrived at a stream, and



VIEW IN THE KASYA HILLS.

observed the first firs disposed in *clumps*—crossed on stepping stones, passed over several hills, and arrived at *Lombray* in two hours and a half from *Siang*. This is about half-way between *Moiplong* and *Nanklow*. Left the village of *Lombray* on the right amidst trees. The country begins to open, and to be better covered with timber, firs especially. This village has also a bad name. *Lombray* stands at an elevation of 5914 feet. The trees are stunted; the rock is a red micaceous slate. Passed over moderate hills and an extensive plain, with some scattered cultivation and a hut here and there, and at twelve o'clock reached the village of *Mairang*—this village is also left on the top of the hill to the right, the road here winding round the bottom of a hill to the left. Proceeded to some shady firs, commanding a view of a beautiful little stream with a small fall, the hillocks clothed with firs rising in picturesque forms around, and behind it. We were now in a granite country, the firs indicating the transition. As we advanced, the firs grew larger, and the country opened into a beautiful undulated park—the scenery is extremely beautiful. Saw several very large upright stones and stone gates. Passed a regular *mow* of grain in the straw, perfectly *English:* observed apple, pear, and plum trees, with brambles and black briars, strawberries, &c.; even daisies are said to carpet the sod! but unfortunately they were not in blossom. Birch trees also flourish. Large granite boulders stand out at intervals, and crown the tops of the hills. This country, growing more beautiful at every step, continues for seven miles from *Lixí hát* to *Nanklow*, which we reached at four P. M. *Nanklow* is 4,550 feet above the level of the sea.

Saturday, 1st November.—My eyes opened this morning on a beautifully clear view of the snow-clad mountains of *Thibet*, elevating their giant peaks above the *Bhotiya* range. These latter, about fourteen thousand feet high, also shewed peaks covered partially with snow; but the former, which attain an elevation of twenty-two thousand feet, are clothed

in perpetual white. They reflect a pinkish tinge, and are thus easily distinguished from the clouds below them. The valley of *Asam*, covered with clouds, looked like a vast white sea.

2d.—Accompanied Capt. JONES to the bottom of the *Nanklow* hill, a distance of four miles, one continued descent, through most beautiful groves of fir and hill bambu, with the most exquisite views of the hills and rocks above and below, from the different elevations, that can be imagined—crossed a brook, and, after a further descent, in an hour and a half's walking and riding, arrived at the *Boga* river. Here is a fall of about sixty feet, the river rushing and breaking with fury over rocks, some of them almost perpendicular—immediately over the fall is a bridge formed of deal spars, built by Mr. SCOTT—it is upwards of one hundred feet long—some of the trees, on which it is supported, were carried away last rains. The fall is received in a large bason, thirty feet deep in the middle and sixty yards in diameter. This bason, with the bridge and the over-hanging rocks and trees, and surrounding scenery, is one of the most beautiful spots I ever visited. The rock, which is extremely hard, is of serpentine. In places, it has been completely honeycombed by the action of the water—large lumps of pure quartz and granite boulders, with other rocks, in detached pieces, abound here, and beautiful flowers and creeping plants complete the scene.

3d.—Rode to Prospect Rock, properly so called—the view it commands of the *Garo* hills, the plain of *Asam* with the *Brahmaputra* river—the *Bhoteah* and *Thibet* mountains, is most grand, extensive, and diversified, and I imagine, can be equalled by few in the world.—The *Kásia* monuments are numerous, and of large size, about *Nanklow*. The circular and square stones, supported by stones placed on end, are extremely similar to the "Cromlechs" found in Cornwall and Wales—doubtless those ancient monuments were appropriated to the same

purpose—the reception of the ashes of deceased Chiefs, enclosed in urns. If this was the case, how singular it is that the customs of nations; in the same stage of society indeed, but situated at such an immeasurable distance from each other, should be found so exactly to coincide! If any doubt exists as to the purpose for which the monuments in Britain were erected, is it not dissipated by observation, as to the actual use of similar monuments in this country at the present day? I did not observe that any of the upright stones were placed in circles, like those of Stone Henge, but generally in lines. Some of them are ornamented by a carved stone, placed like a crown on the top of the centre one. I have not heard that monuments of a similar character have been found in other parts of India. I believe they are peculiar to this range, or rather to the *Kásias*.

4th.—Started at six A. M. on the return to *Cherra*. We made good our journey in two days, without accident. We carried the snowy *Thibet* peaks with us, half the first day's journey, the atmosphere being remarkably clear—indeed the snowy mountains looked better than from *Nanklow*.

We spent the 6th at *Cherra*, and found some beautiful flowers and plants, the roots and seeds of some of which I collected. The cinnamon tree grows here wild—the leaves and young branches are exported to the plains for sale. Also a species of holly is found; in fact, here is an ample unexplored field for a Botanist—also for a Mineralogist. I procured some specimens of the coal, and of other rocks.

On the 9th we started at day-light, in opposite directions. I got down the hill, and reached my budgerow at two P. M. and by three P. M. next day, had commenced the Sessions at *Sylhet*. This is a very pretty station —some of the houses are on small hills—and altogether in soil, plants, and appearance, it is very like *Chittagong*. The rides and drives are very pretty. The place is full of *Manipuris*,—they are clean looking people,

and very industrious—numbers have returned to their own country since the *Burmese* have been driven out—but thousands still remain. They form the great body of an Irregular Corps here, and make good soldiers.

Trip to the Cave of Bhúvan, in the Kásia Hills, December 8th, 1828.

Started from *Sylhet* at sun-rise, and crossed the country to *Company Gunj* on horse back. Crossed the *Chingerkhal* on the way, and found the road dry and good, but here and there some swamp—arrived at the *Gunj*, on the bank of a river, at half-past eleven; and having overtaken the coolies, breakfasted here, under a tree.—Waited till the people came up, and started again at two P. M., reached *Panduk* at half-past three, and the tent, at the foot of the hills, at sun-set.

Tuesday 9th.—Breakfasted, and started on foot for the Cave at ten A. M., passed over three ranges of sandstone hills—about five hundred feet high, covered with timber and brushwood—the road lay for some time along the bed of a mountain torrent—over which we were carried two or three times—arrived at a spot which appears a natural barrier to further progress—perpendicular rocks, with high trees, surround a bason, into which flows a torrent through the only opening in the rocks. The spot is most beautiful and secluded—and the long roots of creepers hanging down like ropes, together with the boldness and height of the rocks, and beauty of the foliage, give the spot a peculiar character. We were carried through the water, and clambered up the bed of the torrent. One of the hills is particularly steep, actually subtending an angle of forty-six degrees—this is called the "Devil's ladder." At a quarter past eleven reached the mouth of the Cave, on the side of the great range of limestone mountains—it faces the S. W. The entrance hardly attracts notice, and certainly few would imagine that the small hole which presents itself was the portal to such magnificent chambers. It looks as if the mountains

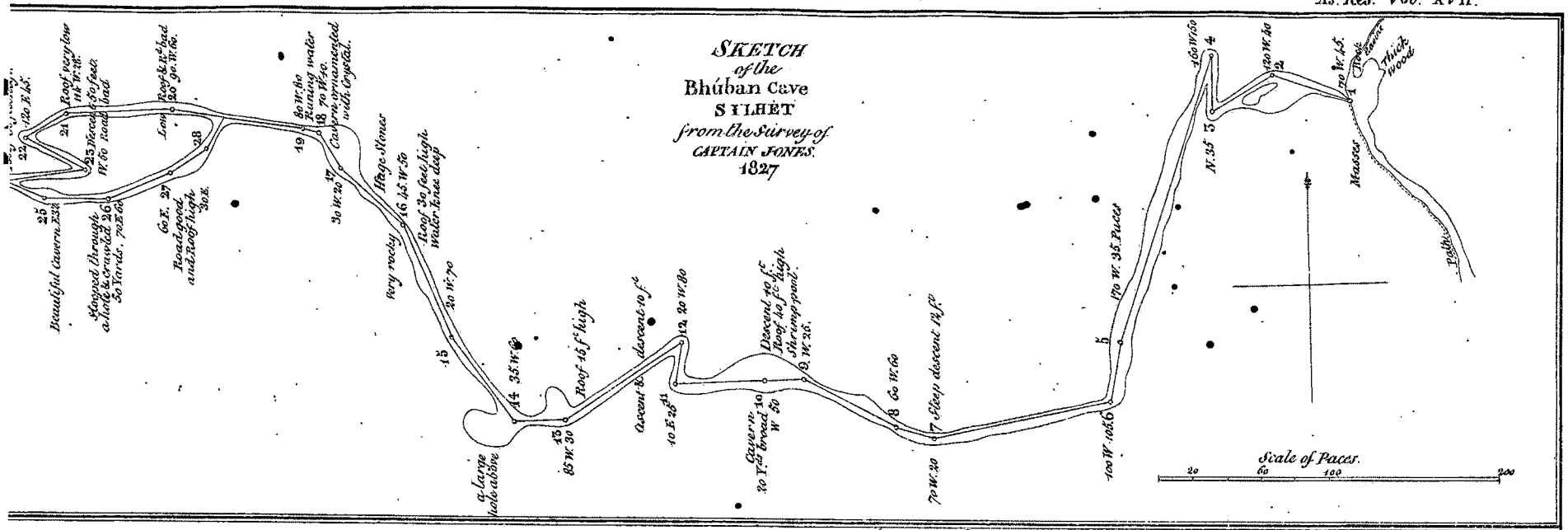
had been hurled together by an earthquake, or by the influence of a volcano—Between two pieces of the detached rock, one person only can enter at a time. One of the low ranges was covered, I observed, with iron scoria, like the refuse of an iron foundery. On entering the Cave, we descended about thirty yards over large broken pieces of rock, some of them difficult to climb over, and reached a level. After preparing our torches, and getting every thing in order, we followed our *Kásia* guide, and, leaving a large cavern unexplored on the left, took a passage on the right—the roof formed a perfect natural arch on one side, more perpendicular than the other—and the whole was incrusted with stalactites. We proceeded on in a W. and N. W. direction. Sometimes the passage was narrow and the roof low, then swelled into superb chambers, the roof forty feet high—in some places, we walked along perfectly smooth rock—in others over soft mud—and in others again, climbed over broken, but huge fragments of rock—here and there, we came upon water in rocky basons—and in many parts the rock was honey-combed by the action of the dropping water. The variety and beauty of the shapes; into which the stalactite has formed itself, exceed description. In one place was a remarkable specimen like a pine tree, about twelve feet high, by one and a half thick—except here and there, however, it did not sparkle to the light as I had expected, being covered with a brown dirty coating—though in particular spots it was very beautiful. After wandering through numerous narrow passages and various splendid halls—sometimes descending fifty feet, and sometimes ascending to a greater height, we were at last stopped by a deep bason of water. Here, as it was getting late, we turned, and by following another passage, found ourselves in our former track again. We had tied a string to a rock at the mouth of the Cave; and let it run off a reel as we advanced, and three balls had been already expended—here we joined the two strings; and some of us remained, while others retracing their steps to meet some of the people with oil pots, who could not descend a precipice—rejoined us again at the same spot.

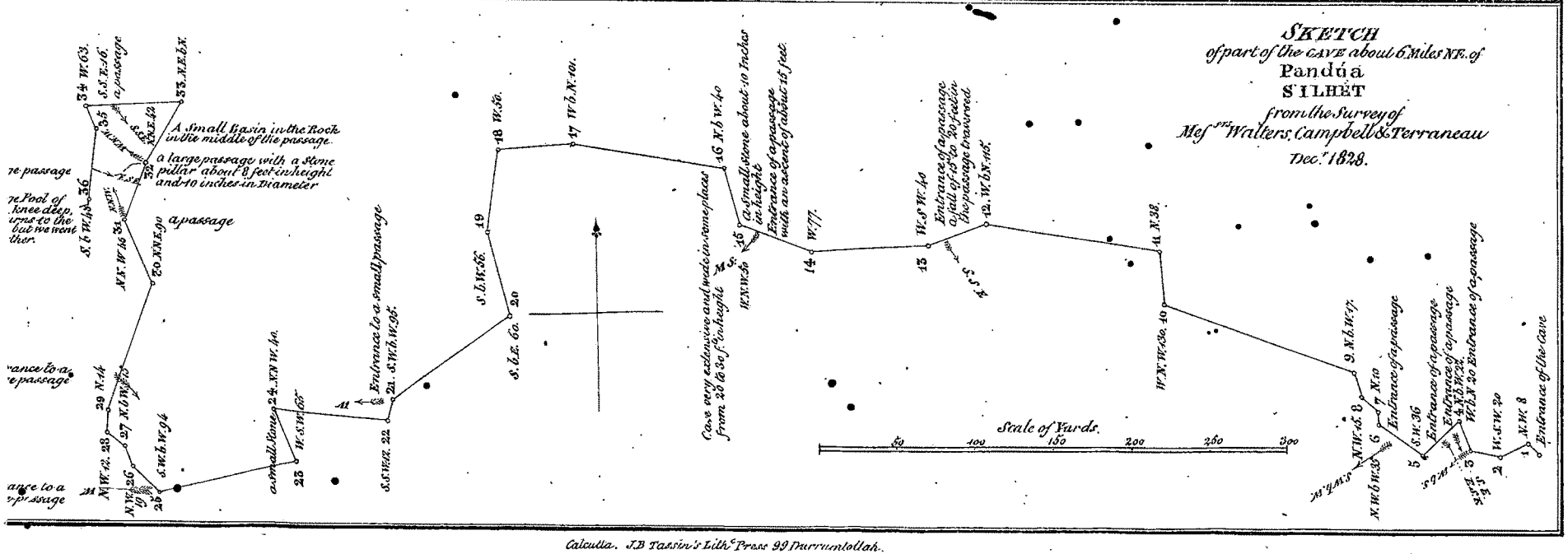
Numerous passages were left to the right and left—and several singular fissures were apparent in the rock at different elevations. The mountain appears to be perforated, in all directions, like a honey-comb. In one place, day-light is visible through the roof at a great height. We now retraced our steps to the mouth of the Cave, which we reached at three o'clock. The thermometer outside the Cave stood at sixty-eight degrees, under the shade of the trees with which the entrance is surrounded—inside, it rose to seventy-four degrees—the air, however, was not close, or disagreeable, indeed a free circulation evidently takes place. I was, on the whole, much pleased and gratified by the excursion—the Cave is certainly a wonderful natural curiosity, and much resembles the drawings of the famous Cave of Antiparos, in the *Levant*. Its full extent has not yet been ascertained—tradition says, it joins the subterranean passages of the Seraglio of *Pekin!* We paced the distance, and took bearings, and found we had gone nearly a mile before we turned. An abrupt and deep precipice obstructs the road a little beyond where we turned, and further than this has not yet been explored. It would be curious to follow it up, and trace out all its ramifications—an opening might very probably be found on the opposite face of the mountain. Also to ascertain the existence, or otherwise, of organic remains in the muddy soil.

Latitude of *Nanklow*,..... 25° 40′ 30″ N.
Longitude,..... 91° 32′ 0″ E.

Range of the Thermometer at Nanklow.

From 23d to 31st May, thermometer varied from 67° 4′ to 75° 7′.
From 1st to 14th June, ,, ,, 68° 6′ to 72° 5′.





Calcutta. J.B. Tassin's Lith.c Press 99 Durrumtollah.

VII.

ROUTE FROM CATHMANDU,

IN NEPAL,

TO TĀZEDŌ, ON THE CHINESE FRONTIER,

With some occasional allusions to the Manners and Customs of the Bhotiahs, by AMÍR, *a Cashmíro-Bhotiah by birth, and by vocation an Interpreter to the Traders on the Route described.*

COMMUNICATED BY B. H. HODGSON, ESQ.

STAGE 1st—to *Sánkhoo:* three cos to the east. *Sánkhú* is within the great valley of *Nepal*, and is inhabited by *Newárs*. It is about a cos in circuit, and is chiefly built of three-storied pukkâ brick houses, and stands on the banks of the *Manharna* river, which is about six yards broad, rapid but shallow.

2d Stage to *Chandéla:* three cos eastward. From *Sánkhú*, about a cos, you come to the foot of the mountain *Chandéla*, of which mountain the ascent to the crest is two cos. The ascent is tolerably well-peopled, and at the top is a *Bauddha* convent, where travellers halt for the day.

3d Stage to *Panijú-dúngá:* two and a half cos. The descent of the mountain *Chandéla* is two cos, and peopled like the ascent. From the

mountain's base you travel over a stony flat of half a cos, and then reac the river *Achá-túgá.* The width of this river is about forty feet, and it depth about seven feet, and its course from north towards the east Its bed is stony and its current violent. The passage is effected in large canoe managed by four men, who are placed there by the *Nepa* government. The traveller's resting place is a thatched house, which wa erected by PANIJU NAIK, a *Newár*, who is agent for the *Nepalese* com merce, and resides at *Lahassa*, the capital of *Bhot.*

4th Stage to *Parábasí:* seven cos. From *Panijú-dúngá* you mov along the shoulders of mountains and through thick forests, for four co to the "*Kshatriya's Dharmasálá,*" where you halt awhile and take some thing to eat, and then proceed three cos further over such a road as tha you have just passed, reaching the village of *Parábasí* late at nigh *Parábasí* is full of Brahmans. There are also many workers in iron a *Parábasí*, the village being a chief foundery of cannon-balls for th *Gorkha* state. The whole of this stage is sprinkled with population an cultivation.

5th Stage, of three cos, to *Chúrkú.* The whole road lies along th shoulders of mountains. At *Chúrkú* is a stone-faced tank, ten pace broad, and as many long, and in depth up to a man's chest. The wate is extremely hot, and emits a most offensive sulphureous odour; but t the taste it is salt. It is esteemed highly effective in curing the cutane ous and venereal diseases of such as bathe in it—and washing the eye with it is a sure remedy for inflammation. Drinking it is no less effica cious in removing internal complaints. The *Bhotiyas*, when suffering fro indigestion and other slight illnesses, come to the tank of *Chúrkú*, wit flesh of buffaloes, sheep and goats, which they fling into the water, wher it is soon boiled, (such is the heat of the water) and then eat it. *Chúrk* means, in the *Bhotiya* language, hot-water. On the side of this tank i

the traveller's resting place, in a good brick-building. This stage here and there exhibits signs of cultivation and population.

6th Stage, of three cos, to *Chanshing*. Twenty paces in advance of *Chúrkú* are three brick houses of two-stories and thatched, built by the *Nepal* government, for the double purpose of protecting travellers and levying customs. Several grain merchants reside in these houses, and also one Subadar, two Jemadars, and sixty soldiers, whose duty is to protect trade and levy tolls. Each merchant pays five rupees *Mahendra malli*, (name of *Nepal* rupee, which is worth thirteen annas). The whole of this stage is along the shoulders of mountains, with here and there a village and some cultivation. *Chanshing*, the name of the halting place, is derived from two *Bhotiya* words, meaning wood and spirituous liquors—whereby hangs the following tale :—A wealthy resident of the spot took it into his head to have a huge vase constructed, the top of which he closed with wood, and made a hole on the side of it. This vessel he kept filled with liquor, and whenever a traveller passed by, he uncorked the vent on the side of the vase, and caused the traveller to drink his fill gratis. Such is the tale.

7th Stage, of two cos, to *Kanglá*. The road is one unbroken ascent, terminated by a village called *Kanglá*. Here, by the road side, is a large stone fixed, which it is the custom for the traveller to strike heavily with another stone, as a notice to the villagers of his arrival. The villagers, upon notice thus obtained, immediately come forth to serve and entertain the traveller.

8th Stage, of ten cos, to *Dúm*—a toilsome repetition of ascents and descents. After a descent of three cos, you come to a river, which is crossed by a huge plank thrown over the stream. This river is the boundary of the *Nepal* territory towards *Bhote*. On the *Nepal* side of

the river is erected a stone pillar, upon which is inscribed, in *Nagri*, "This is the end of the *Nepal* territory;" and upon the *Bhote* side of the stream is a similar erection bearing the intimation, in *Bhotiah*, "Here begins the territory of *Bhotè*." From this river to *Dúm* is seven cos, consisting of continual ascents and descents as before. *Dúm* is a village, containing about one hundred and fifty straw-built huts, tenanted by *Bhotiahs*. At *Dúm*, you can procure several sorts of woollen cloths, "punkhi," &c. and yak-tails, and the wood called *Zabiah*, which is beautifully veined, and used for making the little round cups out of which the people of *Bhote* drink tea.

9th Stage, of three cos, to *Chockshúng*, half a cos from *Dúm*. Travelling along the shoulder of a mountain you come to a fearful spot, where a passage of forty paces is effected by planks, only half a foot wide, laid upon iron spikes, which are driven horizontally into the rock of a sheer precipice—and which precipice is thus passed. This passage is called "the *Lama's* iron road." Thence proceeding a cos, you come to a village called *Sitáng* and *Kamshú*. It consists of about twenty houses, tenanted by *Bhotiahs* and a few *Newárs*. At this place it rains more or less almost constantly, (besides the periodical rains,) for which the following reason is assigned. A *Lama*, called *Kúngla Túba-kú*, had attained to such wisdom and moral excellence, that whatever he wished was instantly accomplished. Coming once to *Sitáng*, he could procure no water there, when he betook himself to prayer—upon which a fount of water immediately sprang upon the dry rock. There is now a tank at the spot, full of fish. At the *Lama's* intercession, it also began to rain—nor from that time to this has the efficacy of the *Lama's* prayer failed to afford the place a perennial supply of rain and spring water. From *Sitáng* to *Chúkshám* is another cos.

10th Stage, of two cos, to *Kútti*. From *Chúkshám*, the road is level all the way till you come to a small round mountain, which looks over

Kútti—and which having surmounted, you reach that place. *Kútti* is a considerable town, where all things needful are to be had in abundance. The mass of people are *Bhotias*—but many *Cashmirians* and *Newárs*, and some *Chinese*, reside there for traffic. All the inhabitants wear woollen, and speak the *Bhoṭia* language. *Kútti* is (inclusively) the boundary of *Bhot*, considered with reference to physical geography, and to the speech of the majority of the people. Five hundred soldiers, (musketeers and archers) several officers, and four pieces of ordnance, are stationed at *Kútti* by the ruler of *Lahassa*, and travellers going from *Nepal* produce their passports to the chief authority at *Kútti*, who keeps them in his own office, and if satisfied with the views and conduct of those who produce them, gives to them new passports under his own hand to the governor of *Tingri*.

11th Stage, of nine cos, to *Yir-lib*. A level road of seven and a half cos brings you to the town of *Phingya-ling*, which is a monastery of several hundred *Lámas*. Here, on the fourth day of the new year, is celebrated an annual festival, which festival the *Bhotiás* call *Tupchi-shin*. Upon this occasion, all the *Lámas* assemble in the temple of the monastery, and with drums, gongs, and trumpets made of men's thigh-bones, make music, to which they dance before the gold and silver images of the gods. Afterwards the *Lámas* eat, drink, and are merry. The *Laics*, who have any petitions to offer to heaven, come on this occasion to the monastery—and first making five prostrations before the images, put a white silk scarf on the neck of some chosen one: next, take a handful of grain, and raising it first to their foreheads, sprinkle it on the image. All the *Lámas* of *Phingya-ling* rigidly practise abstinence from women—nor is a female ever suffered to approach their monastery, save at the annual festival just mentioned. From *Phingya-ling*, one and a half cos, brings the traveller to *Yir-lib*, his halting place, which is a hamlet of six or eight houses of *Bhotias*.

12th Stage, of ten and a half cos, to *Yelum-thungla*. Half a cos in advance of *Yir-lib*, you arrive at the base of a huge mountain called *Yelum-thungla*, the ascent of which is five cos, and the descent as much. The snow never melts on this mountain, and the wind is so violent that the *Bhotias* are wont to say, that 'he who never wept for his father would weep here.' Yaks, and mules, and sheep, alone can pass this mountain, and they only by having the snow strewn with ashes to prevent their slipping. To pass the mountain costs a long day's march, and you reach the base of it late at night, and there halt.

13th Stage, of five cos, to *Tingri*. From *Yelum-thungla* forwards, a fine verdant plain, enamelled with beautiful flowers, extends for the length of two cos. Over the above noted plain scour vast numbers of fleet animals resembling the mule, and called by the *Bhotias*, King. At the extremity of the plain lies the village *Langur*, tenanted by *Bhotias*, and consisting of seven or eight houses. Without the village is a river with depth of water up to a man's chest, and about twenty paces wide. It flows from the direction of *Zúng-shehar*, which is towards the east, and then taking a northern direction to *Kerung*, at length reaches *Digarchi*.

The traveller's passports are examined at *Langúr*. Passing out of the village across the river, the country is equally level and verdant, as on the hither side of it—and like it is well peopled and cultivated—a character which the road maintains to the end of the stage at *Tingri*. *Tingri* is a respectable town of *Bhotias*—and in the centre of it is an elevated and detached spot, wherein dwell a considerable number of *Chinese*. At *Tingri* commences a line of post, maintained by horses, and stretching via *Digarchi and Lahassa* to *China*. The winter is intensely cold at *Tingri*. The periodical rains extend there, and are sometimes unusually severe, so that it rains incessantly for a week. The common food of the people is a mixture composed of *Satu* of barley, and butter, and tea. It is eaten in a

solid state, made up into balls, four times a day—and with it tea is drank. The night meal or dinner, consists of curry and rice, and bread. For riding, mules and ponies are used by the traveller from *Kutti* to this place—and the same animals are the ordinary means of transport for goods and baggage within those limits. The animals brought from *Kutti* must be changed at *Tingri*, and there you may hire other ponies and mules, and likewise camels, for the conveyance of yourself and goods from *Tingri* forwards.

14th Stage, of eight cos to *Shégar*. A cos from *Tingri* occurs a river of about thirty paces wide, and about five feet deep. Beyond this river, at the distance of a cos, is a village named *Mémún*. Six more cos of plain bring you to *Shégar*. *Shégar* is a town of about nine thousand houses—*Bhotias* are the sole inhabitants. The *Lámas* are very numerous, and there is a famous place of worship called *Chamdzhee*. *Shégar* is built in tiers, running from the base to the summit of a small hill. The hill of *Shégar* is esteemed holy ground, and in its bowels a rich mine of gold is said to be contained. The mouth of the mine is closed by a door of gold, over which many *Lámas* constantly watch. It is said that the mountain will, on some future great occasion, give up its treasure, which, meanwhile, is to be strictly guarded. The key of the golden door of the gold mine is at present in the hands of the *Láma* of *Lahassa*, the local guardians having once attempted a theft upon the sacred deposit. Such is the tale of the place. A thousand soldiers are stationed at *Shégar*, by the Ruler of *Lahassa*.

15th Stage, of eight cos, to *Lu-lu*. The whole way is a plain. The pastures are abundant, and the butter (which is procured from cows only, and never from buffaloes—there being none of the latter in *Bhot*) renowned for its excellence. *Lu-lu* is but a small village, but there is a small party of soldiers stationed there, and also two horses belonging to the public-post.

16th Stage, of ten cos, to *Chang-Larché*. Five cos from *Lu-lu* you reach the village of *Chazínkhá*, of seven or eight houses. A Sirdar of the *Lahassa* ruler abides there, who protects trade and travellers, and punishes theft and murder committed on them. The village and the judicial authority are of very recent growth, being established about seven years ago, owing to the occurrence of a foul murder at the spot. The murderers were apprehended, and their remains are even yet visible, nailed on the cross upon which they were executed. Five cos more of level ground, thickly sprinkled with population and cultivation, bring you to *Chang-Larché*, which is a large walled city. Here, the customary means of conveyance for man and goods are mules, and camels, and yaks. The yaks of that place have no horns, and are called *Nallu*. Women are never concealed there. East of the city passes a river, which, flowing northwards, falls into the river of *Digarchí*.

17th Stage, of seven cos, to *Phinju-Ling*. From *Larché*, at the distance of three and a half cos, is a village where resides a wealthy Sirdar on the part of the Court of *Lahassa*, having three hundred *Bhotia* soldiers under him. His duty is that of a Collector and Judge. This man's father was a famous warrior, and perished on the field of battle, and after death his body was embalmed, and placed within the temple of *Fingya Ling*, at *Lahassa*. From the village abovementioned, three and a half more cos of level road, bring the traveller to *Phinju-Ling*—the country around well cultivated. Here also is a station of the public post, with two horses attached to it.

18th Stage, of seven cos, to *Mopchá*. Proceeding from *Phinjú Ling*, three cos, you arrive at the village of *Tāngsu-Chambu*, in which there are many workers in iron. By the village flows a river called *Dí-chú*, proceeding from south to north. This river has a great breadth and violent current, and is crossed by the traveller at a ferry close to the village,

upon which ply two ferry-men. From the river to *Mopchá*, is a plain of four cos. The neighbourhood of *Mopchá* is well stocked with game, such as deer, *kings*, (wild asses,) and *niáras*, (wild sheep;) the *niara* is in size equal to a small cow; hoofs like horses; tail similar to the yak's; bearded like a goat—on the head, horns three feet long, and more than half a foot broad at the base. Owing to the enormous size and peculiar shape of its horns, this animal frequently cannot eat without throwing itself sideways on the ground. The *niara's* horns are much used for vessels to contain liquor.

19th Stage, seven cos, to *Dungá-sètu*. The whole way is over a level and tolerably fertile country, bounded on either hand, at no great distance by mountains—which, indeed, similarly confine the road all the way from *Tingri* to *Digarchí*. *Dungá-sètu* is a hamlet of five or six houses of *Bhotia* cultivators.

20th Stage, of four cos, to *Sákya*. To *Sákya* is four cos. It lies a little out of the direct line of route to the right, but being a great city, full of wonders, it was visited. It stands at the base of a mountain, but is, nevertheless, exposed to an inconceivably violent current of wind—the houses are flat-roofed, and the roofs of such excellent quality as never to admit one drop of rain. They are made thus: first, rafters or beams of wood—then planks of wood—then a deep layer of raw clay, which is exceedingly well-beaten and amalgamated—lastly, and over all, a coating composed of a soft yellow stone, pounded and mixed with water like limestone. The doors are like those of Indian houses: the walls within plastered; without, washed with powdered charcoal, whereby all the houses of *Sákya* exhibit a perfectly black exterior. The people wear woollen, like all *Bhotias*—but dyed black, which is a distinction proper to themselves. The women ornament their heads with strings of couries: the men wear ear-rings of turquoises. *Satú* and tea, and flesh, and spirit

extracted from barley, are the food of all classes. The Rulers of *Sákya* are two *Lámas*, whose lineage is traced to the same source with that of the present imperial family of *China*. These *Lámas* are esteemed divine—a character which they support by total seclusion from the world, and the practise of the severest self-denial and constant mental abstraction. Day and night, winter and summer, their clothes consist of merely a pair of black trowsers, and a narrow band of red cloth circling diagonally round the body, and passing over the right shoulder and under the left arm. These *Lámas* never sleep with their limbs extended at ease, like ordinary mortals, but in the same erect cross-legged attitude which they maintain throughout the day. The better to enable them to keep the erect attitude at the times when they are involuntarily overcome by sleep they pass the diagonal body-band under their feet at night. The names of these *Lámas* are SAKYA GUMBA RAMBORCHI and KUNDA KUSHO, and they are brothers. Their conventual residence is of vast size—and in one of the apartments are placed two leather bags filled with sand, and having a couple of eyes painted on the outside of each of them. The name of the bags is *Upké*, and it is said, whenever any of the followers of these *Lámas* is about to die, some one of the lesser *Lámas*, attendant on the great *Lámas*, takes one of these bags to the abode of the dying man, and, emptying it of the sand, places the mouth of it over the mouth of the man, so as to receive his last breath—which being thus secured in the bag, is carried away to a mansion called *Ukán*, or "the house of breath," for such is the meaning of the word. *Ukán* is an immense structure, whence issues at night a horrible din of ghosts and demons, so that no man hath courage enough to approach it. Once a year, a Sirdar from *Lahassa*, comes to *Sákya*—when the *Lama* called *Sákya Gámba Ramborchi*, shews the interior of *Ukán* to the Sirdar, when the number of the dead deposited therein, during the past twelve months, is seen written, by the hands of angels, on the walls: the *Lama Ramborchi* copies this inscription, and sends the copy to *Lahassa*, by the Sirdar—within

the *Ukán* are a large knife and an axe, and a block and a rope. The axe and the block are covered with blood: and such is the stench of the place, that no one can endure it when it is annually opened as before related—a period at which it is cleansed, and again closed for twelve more months.

The Ecclesiastical Ruler of *Lahassa*, on receiving the melancholy despatch sent by the *Lama* of *Sákya*, causes proclamation to be made, that upon a certain day the scriptures called *Búm* and *Séyó*, be read for the delivery of the souls of the dead, and spiritual welfare of the living, and that offerings be made at the temple for the same ends. The call to contribute money for this purpose is universally attended to, and large sums collected from all parts and sent to *Lahassa*. When the whole is received there, a grand festival is held, which lasts from 1st December to the last day of that month. Presents are likewise sent from the *Lama* of *Lahassa* to the *Lamas* of *Sákya*, who distribute a large portion of them to the poor of *Sákya Sheher*.

Lamas are of two kinds—one practising celibacy; the other, not; the former, called *Kúmdúmbá*, and the latter, *Túmzán*. The great *Lamas* of *Sákya*, are *Támzáns*. They go once a year to visit *Lahassa*, which is twelve days' journey from *Sákya*; but the distance is said to be travelled by the *Lamas* in two days—such is their preter-human power.

The *Lamas*, on this occasion, pay a visit to the Civil Ruler of *Lahassa*, who receives them surrounded by his subordinates in office. These latter bow down their heads to the *Lamas*, who give them their blessing by laying their hands on their heads—while the chief governor rising up meets the *Lamas*, when the two parties join their foreheads together by a mutual stoop, and the Chief then conducts the *Lamas* to seats on his immediate right and left. The visit lasts about an hour. At evening-tide, the *Lamas* go round the City of *Lahassa*, curing the sick, casting out

devils, and doing other good works. On the following morn, they prepare to return home, but before going make up five amulets for the Chief Ruler of *Lahassa*, and his four subordinates, next in rank to himself—which charms being despatched, the *Lamas* set out, and reach *Sákya* again on the fifth day from their departure.

21st Stage, of ten cos, to *Chárúng*. As before noted, you deviate from the high road to go to *Sákya*. A retrograde movement to the left, of four cos, as far as *Dúnga Sétu*, brings you into the right road again. Thence is a journey of six cos to *Chárúng*, the halting place. *Chárúng* is a large village, or rather small town, to the east of which are nine tanks, parallel to each other, and having their chief extent running north and south. Between each tank is a small house for bathers to dress and undress in. Each of the nine tanks has a different medicinal virtue and colour, so that invalids coming to bathe, use that tank which is prescribed for the particular case of each. For liberty to bathe, you pay about four annas to the man having local charge, who is an officer of the *Lahassa* Court. Hundreds of sick people annually resort to these tanks, and most of them with the best results. The qualities of each tank are inscribed on the face of it in stone. The horses of *Chárúng* are famous for their spirit, and docility and strength of constitution.

22d Stage, eight cos, to *Nátán*. Two cos in advance of *Chárúng* you come to a river having a depth of water up to the chest, and a width of about forty paces. On either bank of this river are several water-mills *(Panchaki.)* Beyond the river you pass through a level and cultivated plain, six cos to *Nátán*—which is a large city, containing, it is said, three hundred thousand souls, who are chiefly of the *Lama* caste. The city is walled and has two gates, one to the east, called in *Bhotia*, *Nhokú*, and the other to the west, styled *Charkú*.

23d Stage, of two cos, to *Digarchi*. One cos from *Nátán* is *Teshú Lhambu*, the especial residence of the Great *Lama* presiding over this part of *Bhot*. *Teshú-Lhambu* embraces hundreds of *Gúmbas*, or convents, and some houses of *Cashmiris*, and *Newars*, and *Chinese*. There is a good bazar, which is open from day light till noon, when it is closed at the signal of a bell tolling. Another cos brings you to the City of *Digarchi*, which is of great size, extending chiefly from north to south. Here begins a new language, (dialect?) which is called *Changi*. The houses of *Digarchi* are mostly built of pukka bricks, overlaid with pukka plaster. Three thousand *Bhotia* and two thousand *Khatai* soldiers are stationed at *Digarchi*. In *Digarchi* is a fine menagerie, containing, among other animals, a royal tiger, which was sent from the *Nepal* Raja as a present to the Ruler of *Digarchi*, — tigers not being natives of *Bhot*. The animals which you hired to carry yourself and goods to *Digarchi*, are there relinquished—and new ponies, and camels, and mules, and yaks, hired to take you on.

24th Stage, of nine cos, to *Píná*. About two or three hundred paces without *Digarchi*, towards the east, is a river named *Chúrr-Erku*. Its course is there from north to south—its width about three hundred paces, and its depth great. The bathing of women, and the washing of clothes in this river, are prohibited. The river is passed by an iron bridge of eighteen arches, or passages, built by some former *Lama*, and now called *Samba-Shúr*, or the eastern bridge. From the river to *Píná*, the road runs through a cultivated plain, till you reach another river, which having passed by a bridge, you at once enter the town of *Píná*. *Píná* is situated at the base of a small hill, the top of which is tenanted by several *Bhotia* Sirdars, commanding a small detachment of *Bhotia* and *Chinese* soldiers.

25th Stage, of ten cos, to *Kyángzhé*. The whole way is through a finely cultivated country, producing barley, and pease, and wheat. You

reach *Kyángzhé* by night. A market is held in the middle of this town of *Kyángzhé* every day, from morning till noon, where and when the whole buying and selling of the place is transacted, it not being the custom to expose any thing for sale in shops. Several sorts of woollen cloth (called *Tharma*, and *Punki*, and *Nambú)* are woven here—and the dyers are very expert, so that they can give the cloth a roseate hue equal to the colour of the rose itself. Each year, in September, is a great congress of people at *Kyángzhé*, partly religious, partly mercantile—when all the *Lamas* suspend sacred pictures in all the streets and houses of the town. The pictures represent the future rewards of virtue and vice—and a *Lama* seated beneath each picture, enforces the lesson taught by it to the people. This lasts for three days—the fourth day is consumed in entertainments to friends and relatives. Then follow four days of promiscuous assembly, with music, song, and feasting. On the evening of the eighth day, all the Laics and clergy go in a body to the Chief of the town, each carrying, for presentation, an arrow covered with a white silk scarf, called *Khádar*, and having inscribed on it the donor's name. The Sirdar forwards all these arrows to *Lahassa*, with a letter, intimating to the Ruler of that place, that all the persons whose names are inscribed on the arrows forwarded, assembled at *Kyángzhé*, under your auspices, send you their united blessings. The Ruler of *Lahassa* acknowledges this salutation, by sending a handsome sum of money to the *Lamas* of *Kyángzhé*, which they distribute among themselves. Eight days after the despatch of the arrows to *Lahassa*, and on the sixteenth day of the festival, there are horse-races, and matches at marksmanship with arrows and guns—which last to the end of the month, when the festival terminates.

26th Stage, eight and a half cos, to *Rillúng*. Two cos beyond *Kyángzhé*, a rill of very salt and bitter water issues violently from a rock on the side of the road. It is so fully impregnated with salt, that if you dip your hand in it and then let your hand dry in the sun, it will be covered

with small crystals of salt. Throughout the whole of this Stage, fresh water is very scarce. *Rillúng* is a small hamlet of three or four houses, and is a station of the royal post. It is enclosed on either side by silicious mountains, out of the rock of which numbers of gun flints are made. There is a well of fresh water at *Rillúng*.

27th Stage, of eight cos, to *Lagánché*. Four cos in advance of *Rillúng* you come to a village called *Zarrah*, consisting of three or four houses. This also is a Dâk station. Here travellers halt at noon awhile, and refresh themselves and their cattle with *Satú* and water: and then proceed four cos more to *Lagánché*. The whole of this stage is over a plain bounded on either hand, at the distance of about a cos, by mountains. *Lagánché* is a village of about two hundred houses of *Bhotias*, with a few *Chinese*. South of the village is a vast lake, in truth, an ocean, called *Yamzú*. There are three rocky isles in the lake, where herdsmen dwell and feed the large herds of the *Yak*. Many fishermen also tenant these isles, whose fishing boats are made of leather: for the water is full of fish. The water is extremely salt and bitter.

28th Stage, of eight cos, to *Paité*. Beyond *Lagánché* you pass over a plain extending all the way to *Paité*. The plain is uncultivated, but abounds with deer, *kings*, and other wild animals, which the *Bhotias* of those parts constantly hunt for the sake of their flesh. The great lake of *Yamzú* accompanies the traveller to *Paité*, which is but a tiny hamlet, affording however a market of bread, and fish, and dressed meat, adequate to the traveller's wants. There is a Police Officer at *Paité*, who examines the traveller's baggage and passports.

29th Stage, of twelve and a half cos, to *Kambha*. Eight cos in advance of *Paité* you journey over a plain, and then reach the base of a mountain called *Kambhal*, the ascent of which is one and a half cos. On the top is a

spring of excellent water. The descent of the mountain is three cos, and at the bottom of it lies the village of *Kambha*, of about one hundred houses, tenanted by *Bhotias*, and two *Chinese*. The latter are soldiers, and superintend the royal Dâk.

30th Stage, of four cos, to *Chúshér*. Proceeding one cos, you come to a "*Nullah*," four or five paces wide, and crossed by a wooden bridge. One cos beyond the bridge you come to a mountain called *Chakshamchú-Arí*. On the hither ascent of the mountain, is a convent of regular *Lâmas*—and on the thither side of it another convent of secular or married *Lamas*. Beneath the mountain flows a river called *Yékó-Chángó*. Its waves are very large—and its course from the east to the west. Over it is an iron bridge, and also a ferry by boat. The river's width is nearly a cos. From the river an advance of two miles brings you to the village of *Chúshér*, containing about three hundred houses. In *Chúshér* you may buy walnuts, and large apples, and plums, and several sorts of *Sattú*. The price of a cock is one *sozan*; of a hen two *sozans*.

31st Stage, of four cos, to *Chabná*. The whole way lies through a well cultivated country. *Chabná* is a village of about three hundred houses.

32d Stage, of five cos, to *Changé*. Four cos beyond *Changé* is the City of *Chang*, south of which flows the river *Yékó-Chángó* before mentioned. Large pieces of ice were here seen floating down with its waters. The ferry is by a leathern boat for men, and by a wooden one for animals. You halt on the further side of the river—the width of which, at this place, is about a cos.

33d Stage, of three cos, to *Nám*. Two cos from *Changé* is a mountain, over which you pass. The passage of it is about one cos, and at its base is the village of *Nám*, of five or six houses. Around *Nám* are

gardens belonging to the *Lahassa* Sircar, which abound in fruit, such as walnuts, and apples, and plums. Travellers are seldom prevented from gathering some of these fruits. At this village I got six fowls' eggs for a needle.

34th Stage, of five cos, to *Nitáng*. From *Nám*, one cos, you come to the mountain of *Láchain-Lachún*. Thence forward all is sandy plain. In this stage you again see the *Yékó-Chángó* river. *Nitáng* is a large town, in which some *Chinese* live, from whom the traveller can buy dressed meats for dinner. The shops exhibit quantities of *Kóchín* and *Póstín*, and many other manufactures. There is a post house at *Nitáng*.

35th Stage, of three cos, to *Thi-sambar*. The whole way you travel through cultivated fields of pease, and wheat, and barley. *Thi-sambar* is a large town, tenanted, besides *Bhotias*, by *Chinese* and *Newars*, and *Cashmíris*.

36th Stage, of three and a half cos, to *Lahassa*. One cos in advance of *Thi-sambar*, is a town called *Bírbúm*,* situated at the base of a mountain named *Kimbú*: the houses and roads of this town are made of stone. The inhabitants of this place are obliged to wear one of three sorts of cap called *Pichilí*, and *Chang-dama*, and *Súkhshá*. If you wear not one of these you get beaten by the people, and punished too by the authorities. All the inhabitants of *Bírbúm* are *Lamas*, who practise celibacy. No women can enter *Bírbúm*, save one day of the year, whereon a festival is held. There are no shops within the place, but a market is held without the walls daily from morn till noon, when the market is closed by sound of bell. On the eighth month of the *Bhotia* year, a festival is held at *Bírbúm*, the origin of which the people account for by the following tale. Formerly, there were two Rulers of *Bírbúm*, one of them

* So called in my text, but the context proves it to be a Monastery. However, in *Bhot* now, as in Egypt of old, convents are often towns in size, and a great part of the population monastic.
J. H.

was rich and the other poor. The former, desirous of possessing himself of the latter's portion of the country, addressed him as follows: 'I possess such skill that I can cut a cat in five pieces with one blow,' and he did so accordingly with an axe, before the poor Prince and many others. The multitude shouted applause, and the rich Prince continued to the poor one—'What princely qualities like mine do you possess,'—the poor Prince answered, 'I know yet a more cunning trick than thine—let the people collect to-morrow at noon, and witness my skill—if in their opinion it surpass thine, I will be sovereign—if otherwise, thou shalt be sole Ruler.' The people assembled at the appointed time, and the poor Prince having fixed a peg in the ground at the top of the neighbouring hill, and another peg at the bottom of it, suspended a rope between the pegs—and then proceeding to the hill top, and causing his legs and arms to be tied up, laid his chest on the rope and slid down it without aid of hands or feet: the people crowned the poor Prince's exploit and buried his partner in rule, alive, and erected over his remains a monument shaped like the *Chaitya* of *Sambhu* in *Nepál.* Such is the tale—and annually at present there is a rope festival held at *Birbúm,* in commemoration of the event. There is another annual festival at *Birbúm,* called *Birbúmshitún,* when all the inhabitants of those parts are assembled. They are divided into two bodies—one of males, the other of females—and no male is allowed to mix with the females—more especially no male belonging to the monastic establishment of *Birbúm.* The festival is in honour of the god *Núbá-Rúmchá,* and is maintained with all sorts of merriment and feasting for one whole day—after which the people disperse to their several homes. One cos in advance of *Birbúm* you come to the delightful retreat called "The Garden of the *Cashmíris*"—half a cos beyond which is mount *Pútla,* the monastic abode of the great *Lamá.* The Convent stands on the hill-top, and is very magnificent—the roofs being gilt and the pillars of silver. The slopes of the hill are well cultivated and peopled, and all necessaries are procurable in abundance. From *Pútla* onwards, to the City of *Lahassa,* the whole way is thickly covered with dwellings. *Lahassa*

is a vast and splendid city, enclosed with a wall of stone. The Ruler of *Lahassa* abides in the middle of the city, and four persons next in rank to him, at the four corners of the city. These five persons, with two others, whose ordinary function is the distribution of justice, form a council of state. Small offences are punished by fixing the offender in a sort of stocks by the neck, in the midst of the city—where he remains for four or five days, and is then flogged and dismissed. Murderers are punished with decapitation, after a trial before the two persons above alluded to, and who are called *Tázeen*. Political offences, and grave matters affecting the State, are reported to the Emperor of *China*. There are five gates to the City of *Lahassa*, called the *Nepáli*, and *Sélungi*, and *Ladákhi*, and *Di-jwani*, and *Chinese* gates—all of which are cautiously guarded—especially that leading to *China*—to get through which costs the traveller a whole day of solicitation, and sundry rupees in presents. The cold of winter at *Lahassa* is intense, so much so that spittle will freeze almost before it reaches the ground. In summer, the heat is very temperate. The winds are always boisterous. The chief inhabitants of *Lahassa* are *Bhotias;* next in number to them are *Chinese;* next *Newars*, and least of all, *Cashmíris*. The *Newars*, who, like the *Cashmíris*, reside at *Lahassa*, for the sake of commerce, have about five hundred houses or shops, and the *Cashmíris*, perhaps, three hundred houses. *Lahassa* itself stands on a plain—but around it, on all sides, are mountains.

37th Stage, of ten cos, to *Téjing*. A cos beyond *Lahassa* is a river called *Shanga*, which is about one hundred paces wide, which is passed by leathern and wooden boats: the former for men, the latter for beasts. Two cos beyond the river you come to the village of *Chyí*, of about fifty houses. Travellers halt here awhile to refresh themselves. Thence to *Téjing*, the remaining five cos are through a fine fertile plain, sprinkled with cultivation and population.

38th Stage, of eight cos, to *Mat-kún-ga*. Four cos from *Téjing*, you come to the village of *Lámú-chú-kyá*, full of *Lamas*, who abstain from

eating eggs, and flesh, and fish, and ghee, and salt, and onions, holding the eating of any one of these to be a great sin: there are about twenty houses. The traveller halts here to refresh, and then proceeds four cos, to the great town of *Mat-kún-ga*, inhabited (besides *Bhotias*,) by many *Chinese*. There are some twenty *Chinese* soldiers cantoned here, and a much larger number of *Bhotia* soldiers. The whole Stage is over a plain.

39th Stage, of four cos, to *Ví-sí-king*. This short Stage is over a plain, and you accomplish it by noon. *Ví-sí-king* is a village of seven or eight houses. The animal called *King*, already described, abounds hereabouts, and at night many of them come close to the village, being never disturbed by the inhabitants, who regard them with respect as being the horses of the gods.

40th Stage, of five cos, to *Chumra*. *Chumra* is about as large as *Ví-sí-king*, and is inhabited of *Bhotias* and *Chinese*. The road to it is level, and the village itself affords abundance of supplies for the traveller.

41st Stage, of nine cos, to *Kam*, which is a town of about one hundred houses. It is a station of the post. The whole nine cos are over a level country, but rarely sprinkled with inhabitants.

42nd Stage, of five cos, to *Kímdah*. One cos from *Kam* is a mountain called *Kúng-bála*, of moderate height. The ascent is very good, but the descent (in going out) as bad; and when (as in winter) it is incumbered with snow, it is even perilous. Beyond the mountain, and near its base, is the town of *Kímda*. It is a large place, the station of a post, and of from two to three thousand soldiers of *Khatai* and of *Bhot*.

43rd Stage, of eight cos, to *Shu-ba-du*. Two hundred paces beyond *Kímda*, you meet with the river *Kúng-jú*: over it is an iron bridge of twenty-five arches. On passing the bridge, you pay twenty-five pice to

the officers of the Ruler of *Lahassa*, and ostensibly for the support and repair of the bridge. The water of the *Kúng-jú* is very dark, like charcoal, but is good, and to its virtues is ascribed the freedom which those who drink it enjoy from the *Goitre*. From the river the whole way is level and cultivated. *Shu-ba-du* is a town of moderate size. The tails of the *Yák* are there sold for two pice a piece, and ghee also is exceedingly cheap; but notwithstanding these low prices theft and robbery are very common. The thieves are exceedingly audacious, and belong to a tribe called *Khamba*, who (probably from their vagrant habits) are noted as the great collectors of musk. At *Shu-ba-ju* is a *Gumba*, or monastery, of about two hundred monks, of the *Lama* tribe. These monks are famous for their learning. Yet wo-betide the wealthy trader who passes their abode without making them a present—for, in that case, his merchandise will be plundered as sure as fate. There are about one hundred soldiers, *(Chinese* and *Bhotias)* at *Shú-bá-jú*. The houses are mostly of wood, roofed with stone.

44th Stage, of seven cos, to *Noómárí*. The country is mostly level, with occasional cultivation. There is, however, an insulated hill, which you pass on the right. *Noómárí* is a large town; filled with people of various nations—but no *Cashmírians*. There is a powder magazine here. Most of the houses are of stone, and the people are famous for their skill in making bows and arrows.

45th Stage, of eight cos, to *Mangam*. All the way lies through a level country, and on your right flows the *Kúng-jú* river, already mentioned. There are many *Chinese* soap-makers at *Mangam*—also many *Newari* and *Bhotia* merchants.

46th Stage, of seven cos, to *Táyá*. The road towards the middle of the stage is very stony. This town is famous for thieves, who come at night in the guise of dogs and other animals, to rob the merchant traveller. The Governor of the town is appointed from *Lahassa*. Before his door are

suspended two *Gantahs*, one small and the other large. The merchant, upon his arrival at *Táyá*, must go and strike one of the *Gantahs*. If he strike the small one, he will surely be robbed at night; but if he beat the large one, as surely he may sleep in peace with his property secure. In other words, the police of this town must be well bribed to do their duty.

47th Stage, of eight cos, to *Po-chu-zan*. Two cos from *Táyá*, the way is constantly crossed by deep channels of water for irrigation. The whole country is level and cultivated; deer, and a ravenous animal like a dog, abound. *Po-chu-zan* is a large town, inhabited by *Chinese* and *Bhotias*. The latter are called here by the names *Kúmi* and *Khambah*. There is a *Chinese* bazar and a *Bhotia* bazar. The people wear a large woollen frock extending to the knees, and trowsers reaching to the mid-calf. The women plait their hair like a mat. The houses are of stone.

48th Stage, of nine cos, to *Amdo*. The whole way over a level and cultivated country, producing wheat and barley. The people of these parts live a good deal in small tents, made of woollen stuff. The cotton cloths of *Amdo* are excellent, and are exported to *Lahassa* and *China*.

49th Stage, of twelve cos, to *Tázédó*. All the road is level, and the whole country beautifully cultivated and fertile—producing besides wheat and barley, and peas and potatoes—rice and mangoes, and carrots, and grapes, and almonds. Fruits of all sorts abound. *Tázédó* is a large city, and is the frontier town between *Bhot* and *China*—the latter kingdom being held to commence from *Tázédó*. It is walled—the inhabitants are of *Khatai*, of *Bhot*, and of *China*, and no others. The *Khatais* are *Chinese Mohammedans*, of a very fair complexion, and large stature. They are mostly soldiers.

VIII.

CENSUS

OF THE

CITY OF DACCA.

By HENRY WALTERS, Esq.

The accompanying Statements, drawn up much after the plan of Mr. W. B. Bayley's published Register of the population of *Burdwan*, have been arranged from materials, which my situation of Judge and Magistrate of the City of *Dacca*, has enabled me to collect through the instrumentality of the Police, and aided by the heads of castes and professions, with as great a regard to correctness as is usually attainable in such matters;—and as such, I submit them in the confidence of their general accuracy.

Statements Nos. 1 and 2, exhibit a detailed account of the number of houses inhabited by Hindus and Mohammedans, arranged according to their several castes and professions; and distinguishing the number of males and females above and below sixteen years of age; with the proportion of inhabitants to a house.

Statement No. 3, contains an Abstract of Nos. 1 and 2; and includes also the Armenian, Greek, Portuguese, and French inhabitants,—with the proportions of male and female—adult and minor.

Statement No. 4, shews the number of dwelling-houses, inhabited by all descriptions of persons,—and No. 5, the total number of brick and straw-houses of every description, including shops, golahs, &c.

No. 6, exhibits the number of brick-houses of one or more stories, with the number of enclosed gardens, and the proportion of fixed residents and lodgers; besides the buildings included in this Statement, are the ruins of the Palace erected by AZIM-USHAN, towards the end of the 17th century, compared by Bishop HEBER to the Kremlin of Moscow. Also two gate-ways, and several Mohammedan and Hindu buildings of a religious character; viz. Mosques, 158—Makberahs, or Mausoleums, 109—Sangats, 10—Akáras, 52—and Kálí Báris, or Hindu Temples, 55. These, with the exception of the latter, are mostly in ruins. There are also four Christian Churches, kept in good repair, and the remains of three Katrahs or Caravan-serais.

The Statements marked 7 and 8, shew the number of Hindu and Mohammedan inhabitants, actually found residing in each house or *chouk*.

Statement No. 9, exhibits the average prices of some of the necessaries of life for ten years, from 1820 to 30.

The total Native population, as shewn by the Statements, exclusive of Military, is sixty-six thousand, six hundred and sixty-seven, of which thirty-one thousand four hundred and twenty-nine are Hindu, and thirty-five thousand two hundred and thirty-eight Mohammedan—to which, three hundred and twenty-two Armenians, Greeks, and others, being added,

gives a total population of sixty-six thousand nine hundred and eighty-nine souls, residing in sixteen thousand two hundred and seventy-nine houses or chouks—an amount which falls far short of the estimates heretofore made of the population of this city.

HAMILTON, in his Gazetteer, estimates the population of *Dacca* as exceeding one hundred and fifty thousand; and Bishop HEBER in 1823, states it at three hundred thousand, and the number of houses at ninety thousand.

That the population has fallen off very rapidly since the opening of the free trade, is apparent from the fact that, in 1814, when the Chokidari tax was first introduced, (the records of which furnish the only authentic information of the population in former years now procurable,) the number of houses actually assessed amounted to twenty-one thousand six hundred and thirty-one—and the amount collected, at an average of two anas per house, maintained nearly eight hundred Police Chokidars —whereas, in the present year, (1830,) the number of houses actually assessed, amounted only to ten thousand seven hundred and eight—and the number of Chokidars maintained to two hundred and thirty-six. Hence, in sixteen years, a diminution in the population of about one half may be assumed. The number of native inhabitants found actually existing in each house or chouk, varies from one to ninety;—and the average to each dwelling house is four and one-eighth—a less proportion than at *Burdwan*, which is stated at five and a half; or than at *Benares*, where six has been assumed as a fair average for all sorts of houses.

The number of native males, as shewn by the Statements, exceeds that of the females; the former being thirty-seven thousand four hundred and twenty-two, the latter twenty-nine thousand two hundred and forty-five,—or about one hundred and three and two-thirds males, to one hundred

females. As this is the converse of what is found to occur in other countries; and it is professedly difficult to obtain a faithful account of the "dwellers behind the curtain," if the proportion of males and females may be assumed to be nearly equal,—as they have been found to be at *Benares* and *Burdwan*,—and if the military be also included, the total population of *Dacca* may be fairly assumed to amount at the least to seventy-five thousand. It may at the same time, however, be remarked, that a late Census of the population of *Gorakhpur*, gives one hundred and eight males to one hundred females, for the whole population.

Dacca, notwithstanding its present insignificance as compared with its former grandeur, may nevertheless still be classed among second-rate cities. It has a population greater than *Devonport* or *Brussels*, and nearly equal to that of the whole county of *Fife*. Some new brick dwellings have silently sprung up here and there, it may also be observed, within the last year or two; and this City can now boast an Oil Mill, driven by steam, and an Iron Suspension Bridge. Three more Steam Engines are in the course of erection. On the whole, an increase may be looked for, rather than the contrary, in the wealth, population, and importance of the City of *Dacca*.

It would be curious to compare the gradual decrease of the population, with the falling off of the manufacture of those beautiful cotton fabricks, for which this City was once without a rival in the world. The first falling off in the *Dacca* trade, took place so far back as 1801, previous to which, the yearly advances made by the Honorable Company, and private traders, for *Dacca* muslins, were estimated at upwards of twenty-five lacs of rupees. In 1807, the Honorable Company's investment had fallen to 5,95,900, and the private trade to about 5,60,200. In 1813, the private trade did not exceed 2,05,950, and that of the Honorable Company was scarcely more considerable. And in 1817, the English Commercial

Residency was altogether discontinued. The French and Dutch factories had been abandoned many years before. The division of labour was carried to a great extent in the manufacture of fine muslins. In spinning the very fine thread, more especially, a great degree of skill was attained. It was spun with the fingers on a "*Takwa*," or fine steel spindle, by young women, who could only work during the early part of the morning, while the dew was on the ground; for such was the extreme tenuity of the fibre, that it would not bear manipulation after the sun had risen. One retti of cotton could thus be spun into a thread eighty cubits long; which was sold by the spinners at one rupee eight annas per sicca weight. The "*Raffugars*," or Darners, were also particularly skilful. They could remove an entire thread from a piece of muslin, and replace it by one of a finer texture. The cotton used for the finest thread, was grown in the immediate neighbourhood of *Dacca*, more especially about *Sunergong*. Its fibre is too short, however, to admit of its being worked up by any except that most wonderful of all machines—the human hand. The art of making the very fine muslin fabricks is now lost—and pity it is that it should be so.

In 1820, a Resident of *Dacca*, on a special order received from *China*, procured the manufacture of two pieces of muslin, each ten yards long by one wide, and weighing ten and a half sicca rupees. — The price of each piece was sicca rupees one hundred. In 1822, the same individual received a second commission for two similar pieces, from the same quarter; but the parties who had supplied him on the former occasion, had died in the mean time, and he was unable to execute the commission.

The annual investment, called the "*Malbús Khás*," for the royal wardrobe at *Delhi*, absorbed great part of the finest fabricks in former times: the extreme beauty of some of these muslins, was sufficiently

indicated by the names they bore; such as, "*Abrowan*," running water; "*Shebnem*," evening dew, &c.

Coarse cotton piece goods still continue to be manufactured at *Dacca*, though from the extreme cheapness of English cloths, it is not improbable that the native manufacture will be altogether superseded ere long.

In 1823-4, cotton piece goods, mostly coarse, passed the *Dacca* Custom House, to the value of 14,42,101. In 1829-30, the value of the same export was 9,69,952 only. There was a similar falling off in silk and embroidered goods during the same period.

In the export of the articles of cotton yarn again, there has been an increase. In 1813, the value was 4,480 rupees only; whereas in 1821-22, it amounted to 39,319 rupees. From that period it has, however, decreased; and in 1829-30, the value of the native cotton yarn exported from *Dacca*, amounted to 29,475 rupees only.

Annexed are two Statements—No. 10, shewing the comparative prices of Muslins now manufactured at *Dacca*, and of the same description of cloth the produce of British looms.—No. 11, the comparative prices of *Dacca* cloths, manufactured from yarn spun in the country, and from British cotton yarn. These cannot fail to be interesting at the present moment, and their general accuracy may be relied on.

STATEMENTS.

No. 1. Detailed account of the number of Houses inhabited by Hindus, arranged according to their several castes and professions—distinguishing the number of males and females above and below sixteen years of age—with the proportion of inhabitants to a house.

No. 2. Detailed account of the number of Houses inhabited by Mahommedans, arranged according to their several professions—distinguishing the number of males and females above and below sixteen years of age—with the proportion of inhabitants to a house.

No. 3. Exhibits an Abstract of No. 1 and 2, and includes also the Armenian, Greek, French, and Portugueze inhabitants—with the proportions of male and female, adult and minor.

No. 4. Exhibits the number of Dwelling Houses inhabited by all descriptions of persons.

No. 5. Shews the number of Brick and Straw Houses of all descriptions in the several Thannahs.

No. 6. Shews the number of Brick Houses of one and more stories—the number of Gardens encompassed with walls—and the proportion of fixed inhabitants and of lodgers.

No. 7. Shews the number of Hindu Inhabitants found actually residing in each House or Chouk.

No. 8. Shews the number of Mahommedan Inhabitants found actually residing in each House or Chouk.

No. 9. Exhibits the average prices of some of the necessaries of life for the ten years, from 1820 to 30.

No. 10. A comparative Statement of the prices of Muslins, manufactured at *Dacca*, and the produce of the British Looms.

No. 11. A comparative Statement of the prices of *Dacca* Cloths, manufactured with cotton yarn spun in the country, and from British cotton yarn.

No. 1.

Number.	Caste and Professions.	Number of Dwelling Houses.	Males above 16 years.	Females above 16 years.	Males below 16 years.	Females below 16 years.	Total Inhabitants Males & Females.	Proportion of Inhabitants to a House.
1	Brahmin—Heydayat, ...	9	21	23	11	8	63	7
2	Jajmán, ...	107	182	131	66	47	426	4
3	Talúkdár, ...	5	36	0	1	0	37	$7\frac{2}{5}$
4	Shopkeeper, ...	7	11	0	0	0	11	$1\frac{4}{7}$
5	Thread-maker, ...	1	0	2	0	0	2	2
6	Service, ...	102	320	115	68	40	543	$5\frac{3}{11}$
7	Beggar, ...	29	46	30	14	11	101	$3\frac{3}{6}$
8	Merchant, ...	6	17	7	3	2	29	$4\frac{5}{6}$
9	Broker, ...	2	2	0	0	0	2	1
10	Physician, ...	2	20	20	5	2	47	$23\frac{1}{2}$
11	Picture-drawer, ...	15	33	27	10	5	75	$5\frac{3}{5}$
		285	688	355	178	115	1336.	$4\frac{3}{4}$
12	Khettri—Service, ...	182	257	204	93	38	593	$3\frac{1}{4}$
13	Trader, ...	2	2	4	1	0	7	$3\frac{1}{2}$
14	Mahájan or Merchant, ...	55	84	29	23	2	138	$2\frac{2}{4}$
15	Shopkeeper, ...	118	203	90	27	29	349	$2\frac{12}{13}$
16	Physician, ...	1	1	0	0	0	1	1
17	Cooly, ...	6	5	4	1	0	10	$1\frac{4}{6}$
18	Zemindar, ...	6	27	9	5	1	42	7
19	Grihastha, ...	7	5	6	1	1	13	$1\frac{6}{7}$
		376	584	346	152	71	1153	$3\frac{1}{3}$
20	Baisya—Zemindar, ...	2	9	4	1	1	15	$7\frac{1}{2}$
21	Service, ...	4	12	4	5	2	23	$5\frac{3}{4}$
22	Shopkeeper, ...	11	22	0	0	0	22	2
		17	43	8	6	3	60	$3\frac{1}{2}$
23	Súdra Káyat—Service, ...	500	1190	741	331	295	2557	$5\frac{1}{5}$
24	Grishtha, ...	348	603	549	295	166	1613	$4\frac{3}{3}$
25	Cooly, ...	75	140	46	16	6	208	$2\frac{8}{8}$
26	Shopkeeper, ...	878	1404	646	327	266	2643	3 & upwards.

Number.	Caste and Professions.	Number of Dwelling Houses.	Males above 16 years.	Females above 16 years.	Males below 16 years.	Females below 16 years.	Total Inhabitants Males & Females.	Proportion of Inhabitants to a House.
	Súdra Káyat—*(Continued.)*							
27	Miller, ...	1	0	1	0	1	2	2
28	Weaver, ...	1	2	1	0	1	4	4 near.
29	Broker, ...	2	2	2	0	1	5	$2\frac{1}{2}$
30	Thread-maker, ...	3	0	5	1	1	7	$2\frac{1}{3}$
31	Physician, ...	3	6	3	1	1	11	$3\frac{2}{3}$
32	Gota-maker or Laceman, ...	9	10	16	3	3	32	$3\frac{5}{9}$
33	Brasier, ...	52	99	54	29	22	204	4
34	Bricklayer, ...	6	10	11	5	3	29	5
35	Picture-drawer, ...	1	1	1	0	0	2	2
36	Zemindar, ...	13	73	43	15	16	147	$11\frac{4}{13}$
37	Stone-cutter, ...	4	16	4	0	0	20	5
38	Taylor, ...	2	14	0	0	0	14	7
		1898	3570	2123	1023	782	7498	4
39	Bairágí—Beggar, ...	290	248	159	78	68	553	$1\frac{9}{16}$
40	Courtezan, ...	154	7	388	6	138	539	$3\frac{6}{12}$
41	Singer, ...	1	0	2	0	0	2	2
		155	7	390	6	138	541	$3\frac{1}{2}$
42	Baidya—Zemindar, ...	1	3	0	0	0	3	3
43	Physician, ...	48	141	19	44	11	215	$4\frac{1}{2}$
		49	144	19	44	11	218	$4\frac{4}{9}$
44	Súdra—Carpenter, ...	104	200	151	110	77	538	$5\frac{1}{6}$
45	Goldsmith, ...	1	5	5	5	0	15	15
46	Mogar or Brasier, ...	2	3	4	1	1	9	$4\frac{1}{2}$
47	Tambúr Maker, ...	1	2	2	0	0	4	4
48	Kashidadoz, or Embroiderer, ...	2	0	2	0	0	2	1
		110	210	164	116	78	568	$5\frac{1}{6}$
49	Garowar—Boatman, ...	59	105	95	63	42	305	$5\frac{1}{6}$
50	Manji, ...	21	50	46	23	23	142	$6\frac{3}{4}$
51	Shopkeeper, ...	11	0	17	2	2	21	2
		91	155	158	88	67	468	$5\frac{1}{7}$

Number.	Caste and Professions.	Number of Dwelling Houses.	Males above 16 years.	Females above 16 years.	Males below 16 years.	Females below 16 years.	Total Inhabitants Males & Females.	Proportion of Inhabitants to a House.
52	Dome,	2	3	3	1	1	8	4
53	Jogi—Weaver,	1	3	1	0	0	4	4
54	Tánti—Panní-maker,	13	26	27	17	11	81	$6\frac{1}{4}$
55	Weaver,	376	796	798	482	316	2392	$6\frac{1}{8}$
56	Grihastha,	5	0	5	0	0	5	1
57	Trader,	89	77	97	72	42	288	$3\frac{3}{13}$
58	Broker,	47	122	127	51	45	345	$7\frac{3}{9}$
59	Shopkeeper,	1	2	2	5	2	11	11
60	Thread-maker,	12	1	18	1	2	22	$1\frac{10}{12}$
61	Picture-drawer,	3	4	7	2	1	14	$4\frac{2}{3}$
62	Zemindar,	1	1	3	3	0	7	7
63	Gota-maker, or Laceman,	2	1	3	1	0	5	$2\frac{1}{2}$
64	Saráf,	3	5	6	9	1	21	7
65	Service,	14	60	70	41	29	200	$14\frac{4}{14}$
		566	1095	1163	684	449	3391	6
66	Kulal—Potter,	143	255	224	100	86	665	$4\frac{7}{11}$
67	Khotta—Drum Beater,	6	35	8	3	3	49	$8\frac{1}{6}$
68	Gunri—Shopkeeper,	6	9	12	3	3	27	$4\frac{1}{2}$
69	Kúrmi—Service,	5	5	7	1	0	13	$2\frac{2}{5}$
70	Kandu—Cooly,	42	169	44	9	13	235	$5\frac{2}{3}$
71	Shopkeeper,	20	30	37	7	6	80	4
72	Service,	9	13	12	5	4	34	$3\frac{7}{9}$
		71	212	93	21	23	349	$4\frac{9}{10}$
73	Banian—Shopkeeper,	128	255	198	102	62	617	$4\frac{10}{12}$
74	Service,	112	238	163	73	57	531	$4\frac{3}{4}$
		240	493	361	175	119	1148	$4\frac{3}{4}$
75	Tambúli—Shopkeeper,	1	2	0	1	0	3	3
76	Jánt—Service,	1	1	1	1	0	3	3
77	Chandál—Thread-maker,	2	0	4	1	2	7	$3\frac{1}{2}$
78	Singer,	9	3	10	0	1	14	$1\frac{5}{9}$
79	Service,	12	61	6	2	1	70	$5\frac{10}{12}$
80	Physician,	1	1	1	0	1	3	3
81	Grihastha,	85	63	118	29	30	240	$2\frac{5}{6}$
		109	128	139	32	35	334	$3\frac{1}{16}$

Number.	Caste and Professions.	Number of Dwelling Houses.	Males above 16 years.	Females above 16 years.	Males below 16 years.	Females below 16 years.	Total Inhabitants Males & Females.	Proportion of Inhabitants to a House.
82	Chamár—Currier,	175	364	324	154	101	943	$5\frac{4}{10}$
83	Sáhu—Weaver,	9	15	12	2	7	36	4
84	Shopkeeper,	646	959	584	293	351	2187	$3\frac{5}{12}$
85	Trader,	5	12	10	6	3	31	$6\frac{1}{5}$
86	Saraf,	29	44	20	2	28	54	$3\frac{2}{9}$
87	Broker,	258	477	366	232	141	1216	$4\frac{10}{14}$
88	Service,	195	452	268	153	101	974	5
89	Physician,	1	1	1	1	1	4	4
90	Zemindar,	1	7	13	34	36	90	90
		1144	1967	1274	723	668	4632	$4\frac{1}{21}$
91	Nat—Songster,	9	32	5	3	0	40	$4\frac{4}{9}$
92	Khatak—Hogkeeper,	2	3	2	2	2	9	$4\frac{1}{2}$
93	Máli—Flower Seller,	10	16	21	9	4	50	5
94	Fisherman,	319	489	399	182	145	1215	$3\frac{3}{5}$
95	Mehter,	27	35	43	13	12	103	$3\frac{4}{5}$
96	Sankari—Shell Ornament-maker,	221	459	422	198	170	1249	$5\frac{2}{3}$
97	Téli—Bullock-keeper,	4	5	3	0	0	8	2
98	Kshirkúti—Maker of Chúra,	6	8	9	1	5	23	$3\frac{5}{6}$
		10	13	12	1	5	31	$3\frac{1}{10}$
99	Iron Smith,	44	103	6	6	1	116	$2\frac{5}{8}$
100	Gold Ornament-maker,	66	140	154	83	72	449	$6\frac{8}{10}$
101	Talúkdár,	1	4	4	4	0	12	12
102	Needle-maker,	1	1	1	1	0	3	3
103	Mogar or Brasier,	12	25	26	12	13	76	$6\frac{1}{3}$
104	Picture-drawer,	2	2	4	1	1	8	4
		126	275	195	107	87	664	$5\frac{1}{4}$
105	Garúría—Blanket Seller,	3	5	4	2	1	12	4
106	Service,	2	2	2	0	0	4	2
		5	7	6	2	1	16	$3\frac{1}{5}$
107	Dhobí—Washerman,	188	182	276	141	111	810	$4\frac{3}{8}$
108	Gowála—Milkman,	382	711	798	248	298	2055	$5\frac{3}{8}$

Number.	Caste and Professions	Number of Dwelling Houses.	Males above 16 years.	Females above 16 years.	Males below 16 years.	Females below 16 years.	Total Inhabitants Males & Females.	Proportion of Inhabitants to a House.
109	Toyepâl—Shopkeeper, ...	103	206	153	86	64	509	5
110	Miller, ...	4	0	5	1	0	6	$1\frac{1}{2}$
111	Weaver, ...	35	50	58	24	23	155	$4\frac{2}{5}$
112	Cloth Seller, ...	19	37	39	16	19	111	$5\frac{4}{6}$
113	Trader, ...	4	5	8	8	2	23	$5\frac{3}{4}$
114	Talukdar	2	4	5	1	0	10	5
115	Broker, ...	13	18	33	13	13	77	6
116	Ropemaker, ...	8	1	12	6	1	20	$2\frac{4}{5}$
117	Brasier, ...	4	4	6	1	0	11	$2\frac{3}{4}$
118	Service, ...	11	14	16	3	6	29	$3\frac{6}{11}$
		203	339	335	159	128	961	$4\frac{7}{9}$
119	Barber—Physician, ...	13	17	11	5	4	37	$2\frac{11}{13}$
120	Service, ...	2	2	1	0	0	3	$1\frac{1}{2}$
121	Barber, ...	61	131	45	14	9	199	$3\frac{1}{4}$
		76	150	57	19	13	239	$3\frac{1}{7}$
122	Kahár—Service, ...	8	13	4	4	2	23	$2\frac{7}{8}$

No. 2.

Number.	Caste and Professions	Number of Dwelling Houses.	Males above 16 years.	Females above 16 years.	Males below 16 years.	Females below 16 years.	Total Inhabitants Males & Females.	Proportion of Inhabitants to a House.
1	Musselman—Zemindar, ...	74	416	341	149	159	1065	$14\frac{3}{5}$
2	Service, ...	2067	4231	2436	1458	931	9056	$4\frac{3}{8}$ above.
3	Shopkeeper, ...	1080	1724	1326	594	376	4020	$3\frac{5}{7}$
4	Grihastha, ...	1070	1425	1459	649	346	3879	$3\frac{3}{8}$ nearly.
5	Rafugar or Darner, ...	45	66	75	42	17	200	$4\frac{4}{9}$
6	Cooly, ...	461	656	609	234	179	1678	$3\frac{6}{9}$
7	Nadáfí or Cotton cleaner, ...	15	15	16	10	4	45	3
8	Tika or Gúl seller, ...	85	85	88	40	42	255	3
9	Mullah, ...	23	43	34	11	11	99	$4\frac{1}{4}$ above.
10	Beggar, ...	218	259	232	90	47	628	$2\frac{8}{9}$

Number.	Caste and Professions.	Number of Dwelling Houses.	Males above 16 years.	Females above 16 years.	Males below 16 years.	Females below 16 years.	Total Inhabitants Males & Females.	Proportion of Inhabitants to a House.
11	Taylor,	188	312	295	153	95	855	$4\frac{6}{11}$
12	Trader,	121	297	132	23	20	472	$3\frac{9}{10}$
13	Sikalgar or Polisher of Steel,	11	23	23	7	2	55	5
14	Picture Drawer,	2	2	0	0	0	2	1
15	Tushhizgar or Knife grinder,	4	6	7	2	2	17	$4\frac{1}{4}$
16	Flower seller,	7	5	9	5	4	23	$3\frac{2}{7}$
17	Courtezan,	139	7	207	7	13	234	$1\frac{7}{10}$
18	Songster,	18	14	29	10	2	55	3
19	Physician,	9	16	21	3	5	45	5
20	Grave Digger,	11	9	12	11	4	36	$3\frac{3}{11}$
21	Green Grocer,	43	87	25	14	9	135	$3\frac{1}{7}$
22	Kuntí or Corn Thrasher,	2055	2994	3181	1334	1233	8742	$4\frac{9}{19}$
23	Shoe seller,	63	58	11	5	2	76	$1\frac{1}{5}$
24	Brass or Copper seller,	10	20	0	0	0	20	2
25	Jardozí or Embroiderer,	4	6	8	2	0	16	4
26	Soapmaker,	3	2	4	1	0	7	$2\frac{1}{3}$
27	Rejagarri or Terrace beater,	12	10	17	6	0	33	$2\frac{3}{4}$
28	Water carrier,	10	15	17	8	9	49	$4\frac{9}{10}$
29	Bullock keeper,	21	25	35	15	15	90	$4\frac{2}{7}$
30	Cook,	3	5	5	6	2	18	6
31	Weaver,	18	25	23	13	4	65	$3\frac{3}{5}$
32	Ellachabandi or Ornament stringer,	30	42	52	20	16	130	$4\frac{1}{3}$
33	Noichabund,	23	32	27	30	5	94	4 nearly.
34	Nandiaugí,	5	7	6	6	4	23	$4\frac{3}{5}$
35	Nakârchí or Drum beater,	27	48	43	15	21	127	$4\frac{2}{3}$
36	Bread maker,	16	17	17	0	0	34	$2\frac{1}{8}$
37	Dyer,	23	28	26	12	8	74	$3\frac{1}{5}$
38	Well digger,	16	25	2	0	0	27	$1\frac{2}{3}$
39	Náf buri,	3	2	4	1	1	8	$2\frac{2}{3}$
40	Merchant,	126	216	37	10	23	286	$2\frac{2}{8}$
41	Fisherman,	90	146	123	40	20	329	$3\frac{4}{6}$
42	Torch bearer,	4	5	7	2	2	16	4
43	Chúri seller,	42	122	70	6	6	204	$4\frac{5}{6}$
44	Kashídadoz,	89	8	99	10	6	123	$1\frac{1}{6}$
45	Khandígar or Ivory seller,	56	71	53	35	21	180	$3\frac{1}{5}$
46	Florist,	29	62	53	18	11	144	5
47	Bricklayer,	117	179	172	69	55	475	$4\frac{1}{17}$
48	Fireworker,	5	5	8	5	2	20	4
49	Washerman,	14	23	22	13	9	67	$4\frac{11}{14}$

Number.	Caste and Professions.	Number of Dwelling Houses.	Males above 16 years.	Females above 16 years.	Males below 16 years.	Females below 16 years.	Total Inhabitants Males & Females.	Proportion of Inhabitants to a House.
50	Dandy, ...	13	20	22	10	9	61	$5\frac{1}{12}$
51	Pattara seller, ...	24	64	15	6	7	92	4
52	Barber, ...	3	3	4	3	1	11	$3\frac{2}{3}$
53	Charcoal seller, ...	8	19	18	5	3	45	$5\frac{5}{8}$
54	Khadem to Dargáh, ...	3	3	3	0	2	8	$2\frac{2}{3}$
55	String seller, ...	25	25	25	13	12	75	3
56	Chabuk sowar, ...	6	8	7	0	1	16	$2\frac{4}{6}$
57	Chikandoz, ...	6	14	19	6	1	40	$6\frac{4}{6}$
58	Tinner, ...	103	305	54	9	1	369	$3\frac{4}{7}$
59	Turband binder, ...	4	8	6	2	2	18	$4\frac{1}{2}$
60	Oilman, ...	16	50	38	16	10	114	$7\frac{1}{8}$
61	Tankâdâr Nizámat, ...	9	13	32	7	6	58	$6\frac{4}{9}$
		8825	4428	11741	5271	3798	35238	4

No. 3.

Caste.	Number of Dwelling Houses.	Males above 16 years.	Females above 16 years.	Males below 16 years.	Females below 16 years.	Total Males and Females.	Proportion of Inhabitants to a House.
Armenian, ...	42	49	37	25	15	126	3
Greek, ...	21	19	12	10	7	48	$2\frac{1}{4}$
Portuguese, ...	41	52	36	38	18	144	$3\frac{1}{2}$
French, ...	1	2	0	2	0	4	4
Total....	105	122	85	75	40	322	$3\frac{1}{15}$
Hindoo, ...	7327	13045	9907	4678	3799	31429	$4\frac{2}{7}$ } $4\frac{1}{8}$
Mussulman, ...	8825	14428	11741	5271	3798	35238	4 }
Total....	16257	27595	21733	10024	7637	66989	$4\frac{1}{12}$
	Males above 16	27595	Females above 16..	21733	Adults ..	49328	0
	Males under 16	10024	Females under 16..	7637	Minors ..	17661	0
	Total Males,	37619	Total Females,	29370	0	0	0

No. 4.

Names of Thannahs.	Number of Muhullahs.	Number of Hindoos' Houses.	Number of Mussulmans' Houses.	Number of Armenians' Houses.	Number of the Houses of Portuguese.	Number of the Houses of Greeks.	Number of the Houses of Europeans.	Total of Houses or Barees inhabited.
Islámpur,	20	1239	755	21	19	3	8	2045
Girdkillah,	31	926	1663	5	4	12	1	2611
Dacca Serry,	10	315	561	0	0	0	0	876
Sultaánganj,	12	531	480	0	0	0	0	1011
Sújaitpur,	11	286	628	0	0	0	0	914
Púrabdárwazah,	19	293	1604	22	17	0	0	1936
Amligola,	24	1239	1361	0	0	0	0	2600
Nawábpur,	17	1137	582	0	1	0	0	1720
Naraindía,	18	542	527	0	7	0	0	1076
Saráfatganj,	16	752	730	0	1	0	7	1490
Total,	178	7260	8891	48	49	15	16	16279

No. 5.

Names of Thannahs.	Number of Brick Houses of all descriptions.	Number of Straw Houses, including Golahs, Shops, &c.	Total.
Islámpur,	604	2513	3117
Girdkillah,	1225	2110	3335
Dacca Serry,	112	694	806
Sultaángunj,	18	1927	1945
Sújaitpur,	53	541	594
Púrabdárwazah,	192	1674	1866
Amligola,	251	4028	4279
Nawábpur,	212	1558	1770
Naraindía,	238	1749	1987
Saráfatganj,	259	1169	1428
Total,	3164	17963	21127

No. 6.

Names of Thannahs.	Number of Muhullahs.	Number of Brick Houses of one story.	Number of Brick Houses of two stories.	Number of Brick Houses of three stories.	Number of Gardens encompassed with walls.	Number of fixed Native Inhabitants.	Number of Lodgers.	Total Inhabitants.
Islámpur, ...	20	276	321	71	24	6586	2659	9245
Sultaánganj, ...	12	14	12	0	0	4459	50	4509
Púrabdárwazah, ...	19	139	45	2	10	7673	826	8499
Sújaitpur, ...	11	28	18	1	6	2716	290	3006
Naraindía, ...	18	133	113	2	29	8008	718	8726
Saráfatganj, ...	16	132	127	6	4	4957	1492	6449
Girdkillah, ...	31	221	1001	4	10	6775	1301	8076
Dacca Serry, ...	10	66	35	2	14	3017	497	3514
Nawábpur, ...	17	105	153	12	20	8756	1287	10043
Amligola, ...	24	139	85	4	36	4320	280	4600
Total, ...	178	1253	1910	104	153	57267	9400	66667

No. 9.

	Bengalee Style.	A. D.	Rice. Fine. Maund.	Rice. Fine. Seer.	Rice. Fine. Chetack.	Rice. Coarse. Maund.	Rice. Coarse. Seer.	Rice. Coarse. Chetack.	Salt. Maund.	Salt. Seer.	Salt. Chetack.	Oil. Maund.	Oil. Seer.	Oil. Chetack.	Ghee. Maund.	Ghee. Seer.	Ghee. Chetack.	Jagry. Maund.	Jagry. Seer.	Jagry. Chetack.	Turmeric. Maund.	Turmeric. Seer.	Turmeric. Chetack.
	1227	1820-21	0	31	4	0	33	0	0	8	12	0	5	0	0	2	8	0	9	0	0	9	0
	1228	1821-22	0	35	0	0	39	0	0	8	8	0	5	8	0	2	8	0	9	8	0	8	0
	1229	1822-23	0	37	8	1	3	0	0	6	8	0	4	8	0	2	2	0	11	0	0	8	8
	1230	1823-24	0	23	0	0	28	0	0	8	0	0	5	8	0	1	8	0	11	4	0	10	8
	1231	1824-25	0	22	4	0	27	12	0	8	4	0	6	4	0	2	0	0	9	12	0	12	2
	1232	1825-26	0	31	4	0	36	4	0	8	2	0	5	1	0	1	12	0	8	12	0	15	4
	1233	1826-27	0	33	12	1	1	4	0	7	0	0	3	8	0	2	0	0	10	8	0	16	6
	1234	1827-28	0	33	0	0	36	8	0	7	4	0	4	15	0	2	8	0	11	8	0	20	4
	1235	1828-29	0	35	10	0	38	14	0	8	4	0	6	5	0	2	8	0	13	5	0	18	0
	1236	1829-30	0	30	8	0	36	6	0	8	6	0	5	12	0	2	0	0	10	4	0	8	0
Total of 10 years, ...	....	.....	7	33	2	9	0	0	1	39	0	1	12	5	0	21	6	2	24	13	3	6	0
Ditto calculated at 80 Sa. 8 As. weight per Seer, Or on an average per Annum, ...	....	.....	0	31	5	0	36	0	0	7	14	0	5	4	0	2	2	0	10	8	0	12	9

No. 10.

Comparative Statement of the Prices of Muslins manufactured at Dacca, and the produce of the British Looms.

Assortments.	Manufactured at Dacca.	Produce of the British Looms.
Jamdaní, with small spot, ... 1st sort, ...	25	8
2d ditto, ...	16	5
Jamdaní, Mahíposh, ...	27 to 28	6
Ditto, Diagonal pattern, ...	12 to 13	4 to 4½
Jaconet Muslin, 40½, corresponding with Jungle Cossas, ... 1st sort, ...	38 to 40	20 to 22
2d ditto, ...	24 to 25	9 to 10
Nyansook, 40 by 2¼, ...	8 to 9	5 to 6
Cambric, corresponding with Camiz Cossas, ...	13 to 14	6 to 9½
Jamdaní blue or red sprigs, ...	15 to 16	4 to 5
Jamdaní Sarîs, ...	12 to 13	5 to 5½
Book Muslin, corresponding with Mulmulls, ...	10 to 11	7 to 8
Sahun, 48 by 3, ...	28 to 30	14 to 15

No. 11.

Comparative Statement of the Prices of Dacca Cloths, manufactured with Cotton Yarn spun in the Country, and from British Cotton Yarn.

Assortments.		Dacca Muslins.	
		Manufactured with Country Cotton Thread.	Manufactured with Europe Cotton Yarn.
Mulmuls, 40 by 2,	1st sort,	8 to 9	3 to 4
	2d ditto,	10 to 12	5 to 6
	3d ditto,	14 to 15	9 to 10
Sablams, 40 by 2,	1st ditto,	4 to 4½	2½
	2d ditto,	5½ to 6	3
	3d ditto,	11 to 12	6
	4th ditto,	14 to 15	8
	5th ditto,	17 to 18	10 to 11
Sarbands, 40 cubits,	1st ditto,	3	1½
	2d ditto,	3½ to 3¾	1¾
Allabalís Adí,	1st ditto,	5 to 5½	3
	2d ditto,	7 to 7½	4
	3d ditto,	8 to 9	5 to 5½
	4th ditto,	9 to 10	6 to 6½
Tarindans, 40 cubits,	1st ditto,	4½ to 5	3
	2d ditto,	6½ to 7	4
	3d ditto,	11 to 12	7 to 8
	4th ditto,	13 to 14	10 to 11
Sarí, per pair,	1st ditto,	5	3
	2d ditto,	5 to 5½	3½ to 4
	3d ditto,	9 to 10	5½ to 6
Dhotis, per pair,	1st ditto,	5	3
	2d ditto,	6 to 6½	3½
	3d ditto,	7 to 7½	5
	4th ditto,	8 to 8½	6
	5th ditto,	10.10½ to 11	8 or 8½
	6th ditto,	9 to 10	7 to 7½
Sheraganj Cossas, 40 cubits,	1st ditto,	4	2¾
	2d ditto,	5	3¼
	3d ditto,	5½ to 6	4
	4th ditto,	7 to 7½	5
	5th ditto,	8 to 8½	6
Sheraganj Hamam, 40 by 3,	1st ditto,	5	3½
	2d ditto,	6 to 6½	4
	3d ditto,	7½ to 8	5
	4th ditto,	9 to 9½	6 to 7
	5th ditto,	11 to 12	8 to 9
	6th ditto,	14 to 15	10 to 11
Jamdan Dhotis, 10 cubits,	1st ditto,	5½ to 6	4
	2d ditto,	6½ to 7	4½
	3d ditto,	7½ to 8	5

IX.

DESCRIPTION

OF

SELECT COINS,

FROM ORIGINALS OR DRAWINGS IN THE POSSESSION OF THE ASIATIC SOCIETY.

By H. H. WILSON, Esq.
Secretary A. S.

The subject of Indian Numismatics has hitherto received but little attention from the Members of our Society. The cause of this neglect it is not difficult to explain.

Collections of Coins, formed in this country, have always been the work of private individuals. Whilst in existence, therefore, they have been accessible only to the friends of the proprietors, and after the death of the latter, they have been either dispersed and lost, or sent to England, and equally lost to India. Few opportunities have consequently occurred of examining with any degree of attention such Coins as have been met with, or of knowing indeed in what number, or of what description, ancient Medals have been found.

Another reason why the subject has been neglected is the want of assistance from descriptions or plates: little, it is believed, having been published in Europe upon the ancient Coins of India, and at any rate

such publications not being procurable in this Country. The chief means of instruction and comparison have therefore been defective, and the guidance of those scholars to whom the study of Coins and Medals is familiar, has been equally unavailable. Any attempt to elucidate the ancient currencies of India, must consequently be conducted under peculiar disadvantages, and the consciousness of this has no doubt deterred collectors and antiquarians from attempting to give any description of their cabinets to the public.

The Coins found in India, either purchased in the Bazars or dug up at different places, have been of various descriptions. The Coins of the *Arsakian* and *Sassanian* Princes are occasionally met with, and Roman Coins are not at all uncommon. The Coins of the Mohammedan Kings of the several principalities, founded by the Musselmans, constitute a third and extensive division, whilst the fourth, the rarest and least familiar, are either of comparatively recent date and known Hindu origin, or are apparently of more remote antiquity, and may be conjectured to be the Coins either of early Hindu Princes, or of foreign Sovereigns ruling over territories in *Hindustan*. The two first classes need no particular illustration at present, and the third has occasionally found a place in publications on Oriental Coins. The last has recently attracted some notice in Europe, from the interesting specimens given by Lieutenant-Colonel Tod, in the 1st Volume of the Transactions of the Royal Asiatic Society, with his remarks, and the further observations of Augustus Schlegel in the Indische Bibliothek, which have added another Sovereign to the list of Kings of *Bactria*, and thrown some new light upon the history of the people, by whom the *Bactrian* kingdom was overthrown.

The perusal of these papers suggested to me an examination of the Cabinet of the Society, in order to ascertain, if any of the pieces it contains, were likely to confirm or extend the discoveries made in Europe.

The result has been so far satisfactory, that it has produced duplicates of some of Colonel TOD's Coins, and added others of evidently analogous fabrication, although it must be confessed that it does not furnish any positive information as to their origin or date: it would scarcely be worth while therefore to publish the particulars, except as a contribution to a branch of enquiry hitherto almost unattempted, and as promoting the fuller investigation of the subject.

The chief collections of Coins made in this country, of which we have most of us heard, and which some of us may have inspected, are the following: I. The collection of the late Colonel WILLOUGHBY, of Patna: this was a very miscellaneous assemblage, of which the most valuable part was a tolerably numerous series of Mohammedan Coins. It has, I believe, been sent home. II. The collection of a Mr. SEYMOUR, of which I had no personal knowledge, but which from drawings in our possession, seems to have contained some curious Coins. This collection has, I believe, been dispersed. III. A large collection of Copper Coins, chiefly Mohammedan, but many Roman, made by Dr. R. TYTLER, and presented by him to the Honorable the Court of Directors; and lastly, IV, the collection of the late Colonel MACKENZIE, which contained a few curious Hindu pieces, and a vast number of the Copper Coins of the South of India, many modern, but some ancient, including Roman Coins dug up chiefly at Dipaldinna and Amaravati, near the Godaverí. The bulk of this collection is now also in the Museum of the India House, but the duplicates of such as existed in any number, were presented by the liberality of the Government of Bengal to the Cabinet of our Society.

Besides the specimens derived from this source, the Society is in possession of others presented at different times by various benefactors, and of duplicate drawings of Coins from the collections above mentioned, or of specimens in the hands of private individuals. Some of the

latter have been selected for the accompanying remarks; whilst for the drawings of the rest, as well as of a few Coins in his own possession and in mine, the Society is indebted to our associate Mr. JAMES PRINSEP. The results of these joint researches I shall now proceed to particularise.

PLATE I. FIGURE 1.

A GOLD COIN.

OBVERSE.—The upper half of a male figure in a close or mailed vest with sleeves. On the head is a cap or helmet with flaps covering the ears, and fillets projecting behind. The right hand holds a mace or sceptre; the face has mustachios but no beard—round the margin are the following characters. These bear a strong resemblance in several instances to Greek; but do not, as far as I am able to ascertain, form any legible inscription: some of them resemble the characters on the staff of FEROZ SHAH, at *Delhi*, and on other columns.

REVERSE.—A seated figure, the upper part of the body naked, the lower clothed in the common Hindu *Dhoti*. The head wears a helmet; one hand rests against the side, the other is extended and holds what appears to be a ring or discus: from the shoulders rise what may be intended either for two other arms or for a halo: the feet rest on a footstool and the legs of the seat or throne are those of an animal. On the left of the figure is an emblem or Monogram, a sort of key, the handle apparently incomplete, and four wards. There are also characters like those on the obverse, but less distinct.

Although there is no exact duplicate of this Coin, yet it is identifiable with several of those which remain to be described in various particulars. Thus similar characters are observable in Nos. 2 and 3, 4, of the first Plate, and in Nos. 25, 26, 27, 28, 30, 31, and 34, of the second Plate, whilst the emblem on the reverse or a mark of this form occasionally a little varied, the handle being a lozenge instead of a circle, or three points being substituted for four may be observed on a still greater number or Nos. 2, 3, 4, 6, 7, 12, 13, 14, of Plate I. and in Nos. 24, 25, 26, 31, 33, and 35, of Plate II, besides indistinctly in some others. Many Coins again on which it does not appear, are identified by other characteristics, leaving little doubt of their belonging to a common series, although probably struck at various periods and under different Princes. The whole of this series appears to me to comprehend the following: Plate I. No. 1 to No. 16. Plate II. No. 23 to No. 40. Some others may belong to the same, but are of very rude execution, as in Plate I. No. 22, in Plate II. 41 to 47.

The original of this Coin was lately discovered by General VENTURA, in an ancient building at *Mánikyála:* an impression in wax was sent by him to the Society, from which several plaster castes were carefully taken, and thence drawings made by Mr. PRINSEP. It would have been more satisfactory, it is true, to have consulted the original, but there is no doubt of the characteristics of the Coin being faithfully represented.

An account of General VENTURA's investigations is given as an Appendix to this paper. They do not, as far as we are acquainted with them, determine the age or origin of the Tope *Mánikyála*, although they leave it likely that it is a structure of the 3d or 4th century of the Christian era, if not earlier. As the Coins dug up there, are of evidently different periods, it can only be asserted of them, generally, that they preceded the

erection of the building: but by how long an interval it is not safe to conjecture, nor is any light thrown upon their origin, although it is not likely that they were of remote fabrication either with regard to place or time, and the present Coin may be referred with some probability to the *Indo-Scythic* princes of Western India, about the commencement of the Christian era.

The Coin in question is not Greek in any of its details, except the doubtful similarity of some of the letters. It differs also very materially from the Parthian or Arsacidan Medals in the general character of the obverse, although in some of VAILLANT's Coins, particularly one in the Appendix, 'Nummus Regis Persarum incogniti,' the head dress is much the same. The reverse, however, is totally different from any thing observable in the Parthian Coins, and on both faces the impressions are utterly distinct from those borne by Medals of the *Sassanian* princes of *Persia*. It cannot, therefore, be referred to either of those series; and, from the decidedly Hindu character of the reverse, is no doubt the Coin either of an Indian prince or of a prince ruling over a Hindu people probably in the *Panjab*, or on the north-western frontier, (see observation on No. 23,) about the commencement of the Christian era.

PLATE I. FIGURE 2.

A GOLD COIN.

OBVERSE.—A male figure standing: he has a cap on his head, with fillets floating over his shoulders: he appears an old man with a beard and mustachios, and is drest in a sort of tunic and pantaloons, with a mantle at his back: his right arm is extended, and his hand appears to grasp a small altar, his left supports a sceptre or spear: the following inscription is on the margin—

REVERSE.—A female figure with long hair, a halo round her head, dressed in a stole, and holding in her right hand, the only one visible, what may be intended for a lotus: the characters [illegible] are legible, and the symbol appears a sort of key, or ring and staff, surmounted by four points, [illegible]; it wants the cross bar.

This Coin is allied to the preceding by the identity of the characters, and by the symbol, which, however, wants the cross bar that occurs in the preceding. The head dress and physiognomy of the figure on the obverse, are also different, and it would seem to be therefore the Coin of a different prince, although of the same dynasty. The principal figure recurs in several after Coins.

This Coin is one of two turned up in a field by a husbandman ploughing near *Comilla*, in *Tipera;* the original was in the possession of Dr. CAREY: the engraving is from a drawing in the Society's possession.

PLATE I. FIGURES 3 and 4.*

GOLD COINS IN THE CABINET OF THE ASIATIC SOCIETY.

OBVERSE.—A figure, in its general character, similar to the former—a man erect, with a tunic of mail or a cuirass with skirts: he has a tiara or crown on his head, with fillets and a halo: the right arm is extended, and grasps what looks like a bucket with a handle, or may be a cuirass: above the arm is a trident: the left arm holds a three-pointed spear, or a spear with a guard: he has a sword at his side. The

* They were inadvertently and unnecessarily engraved in duplicate, being precisely alike.

epigraphe is in characters like those of the preceding in most respects, or [illegible].

REVERSE.—A figure, apparently female, in front of a bull: the right arm is extended, and has an oval band apparently attached to the wrist: the left arm supports a trident: above the right occurs a similar symbol as before, [illegible] but with a lozenge handle and cross bar: there are these characters on the left margin, [illegible].

These Coins are connected by the costume of the figure on the obverse, the characters and the symbol with the two preceding: the reverse is decidedly Hindu: the two characters in the middle may be forms of व and प, or they may represent the figures १५ fifteen. The pieces in the Society's possession, were part of a number in the Mackenzie Cabinet, and by their freshness, as well as by their identity, appear to have been recently fabricated from the same die. What their history is, has not been ascertained, but they were probably multiplied at Colonel MACKENZIE's expence, from some common original which he considered of great curiosity.

PLATE I. FIGURE 5.

OBVERSE.—A male figure, with a crown or a wreath on his head, also surrounded by a halo: he wears a short tunic with skirts and trowsers: his left hand inverted holds the bottom of what appears to be a trophy or standard: his right holds a spear, or another trophy or banner: there are characters on the right, which offer some analogy to those found in ancient *Nágarí* inscriptions, and the upper row might be conjectured to form the syllable *Sri*.

REVERSE.—Female figure seated on a throne or bed, with a foot-stool: there are characters [illegible] on her right, which correspond with some recognised as ancient *Nágarí*,—thus the two first occur as र and का. The whole is, however, too broken to allow of a complete word being formed. The upper marks on the left hand appear to be the lower part of the lozenge symbol.

The relation of this Coin to the preceding is not altogether decided, but it is evidently allied to Nos. 7 and 13, in which we have the symbol characteristic of the series, and is unquestionably Hindu.

The engraving is from a drawing in the possession of the Society, from an original said to be in the possession of Colonel GRACE.

PLATE I. FIGURE 6.

A GOLD COIN.

OBVERSE.—A male figure with high cap, halo, fillets on the head, and the person arrayed in a tunic and trowsers: with his right hand he appears to be offering incense on a fire-altar, and above the arm is a trisul or trident: the left arm appears to hold a spear, whilst a sword hangs from his waist.

REVERSE.—A female figure seated on a throne with a back, or the supporters of a canopy: her body is naked above, but clothed below the waist: her feet rest on a cushion: the right arm is extended: the left appears to hold a sort of cornucopeia, but the execution is indistinct: on the left are characters which resemble some of those on other Coins: on

the right is the symbol, which, though worn, appears clearly enough.

The attitude and costume of the figure, the characters, and the symbol, ally this Coin to Figures 2, 3 and 4, whilst the sitting figure on the reverse resembles that of Figure 5.

The drawing is taken from the original, which is in my possession, being purchased from a Native, according to whose account it was found about a year and a half ago, in the bed of a tank in the village *Daspur*, Purgunnah *Pandua*, of the *Hugli* district.

PLATE I. FIGURE 7.

A GOLD COIN.

OBVERSE.—Male figure in a similar costume as the last, only the body appears to be dressed in a coat or waistcoat with skirts: the attitude is the same, and the hands are similarly occupied: above the right arm appears something like a standard or trophy, a staff surmounted by a bird, an eagle or *Garuda:* characters round the margin like these are imperfectly distinguishable.

REVERSE.—A female in a stole, seated as before: the symbol is distinct: on the left are these characters— : the three first may be the letters प, ा, क, but they will not assist us to a probable meaning or name. The costume and attitude of both figures, and the symbol on the reverse, shew these Coins to belong to the same family as the preceding, and to be of Hindu origin.

The plate is taken from the drawing of a Coin said to be in the possession of Mr. EDWARDS, and the differences between this Coin and No. 6, may possibly be, in some degree, variations in the delineation.

PLATE I. FIGURES 8, 9, and 10.

GOLD COINS.

OBVERSE.—A male figure in cap, tunic and pantaloons, as before: on his right appears something like a club; there are no characters, but various marks, the purport of which is not evident.

REVERSE.—A very rude representation of what appears to be intended for a female figure.

Of these Coins, two are in my possession, and were procured at *Kanoj;* the third belongs to the Society. The costume of the male figure allies them to the preceding, and the figure on the reverse may be designed for the seated figures of 5, 6, 7, but the pieces are of very rude execution.

PLATE I. FIGURE 11.

A GOLD COIN.

OBVERSE.—Figure as in the last.

REVERSE.—A female figure seated, her feet resting upon a lotus: a few characters in the margin undecypherable.

The figures on this Coin ally it with the preceding, but it is of rude execution, and much worn. The plate is from the drawing of a Coin stated to belong to Colonel GRACE.

PLATE I. FIGURE 12.

A GOLD COIN.

OBVERSE.—A male and female figure on either side of what appears to be a column, surmounted by a bird: both figures are Hindu: the man holds a bow, the woman a flower: there are two or three characters on the upper margin, but imperfect.

REVERSE.—A female figure sitting on a lotus, which rests upon what looks like a tortoise: her right hand is extended, and holds what is perhaps meant for the lotus with its long fibrous stalk: above the arm occurs a monogram of a similar description with that in preceding pieces: instead of a circle, however, there is a lozenge , and the points are only three: characters are legible, of which some are clearly Nágarí, but the combination is illegible: they are

This Coin is decidedly Hindu, and the figures on the obverse are, in all likelihood, intended for RÁMA and SÍTÁ: the bird on the pillar or the staff will, in that case, be *Garura*: the figure on the reverse appears to be that of LAKSHMI seated on a lotus resting upon a tortoise. The monogram connects it with the first number of the series, from which it may differ in being the currency of Native Hindu princes. The staff and bird on the obverse, ally it to Figures 5 and 6.

The drawing is made from the original Coin, which was obtained by W. BACON, Esq. at *Kanoj*, and presented to the Benares Literary Society: the execution is very neat.

PLATE I. FIGURE 13.

A GOLD COIN.

OBVERSE.—A male figure with a halo round his head, necklace and jewel on his breast, an open tunic on his body apparently, but naked below the waist: his left hand holds a bow: his left appears to be pulling up a trophy or pillar, surmounted by a bird: there are characters on the right, clearly Nágarí: the first is broken, but the rest form [illegible]

REVERSE.—A female figure as in the preceding: both arms are extended, and the implement in the right hand looks like a whip. The monogram is the same: the characters differ, and scarcely look like letters.

This Coin is evidently connected with the preceding by the reverse, whilst the obverse is essentially the same as in Figures 5 and 6. It also resembles the two first of Captain TOD's fourth series: the marks or characters on the reverse are precisely the same as in the second of them, and which Colonel TOD considers to be the same with those on the column at *Delhi;* but on comparing them with the plates in the seventh volume of the Researches, the similarity does not occur to me. It appears that these Coins are not uncommon. Colonel TOD has them from *Agra*, *Mathura*, *Ujayin*, and *Ajmer*. "Dr. WILKINS," he adds, "has some found even in *Bengal;* he thinks he can make out the word *Chandra* upon them." The final of the word on the reverse, in our specimen, is not impossibly गुप्तः, and we should thus have a Coin of *Chandragupta;* but the preceding letters cannot satisfactorily be identified with चन्द्रः the word may be नरगुप्तः.

There is a difference in the position and character of the emblem in this and in the last Coin, although essentially it is the same. It is more

like a banner in this than in the former, and looks as if it were upheld by the right hand. Colonel TOD calls it a trophy, the ancient Grecian or Roman standard, the eagle with expanded wings on a staff. It has the characters of a Roman standard, but the type is not like an eagle: it is more like a goose—it is very probably, however, *Garura*, whilst the figure is that of VISHNU or RÂMA, the latter being characterised by the bow.

The plate is from the drawing of a Coin in the Cabinet of the late Colonel WILLOUGHBY.

PLATE I. FIGURE 14.

A GOLD COIN.

OBVERSE.—Male figure as in the last, but in a more energetic attitude: the right hand extends rather beyond the trophy: the characters on the right are not within the face of the Coin: others, of a less certain description, occur on the left.

REVERSE.—Female figure as in the last; monogram: the same characters distinct, but unknown, though possibly ancient Nágarí.

This is the same Coin essentially as the last, but of ruder execution, or it has been less carefully delineated. The plate is from a drawing of a Coin in the possession of Mr. BEE.

PLATE I. FIGURE 15.

A GOLD COIN.

OBVERSE.—A figure with a bow in his left hand, and various undecypherable marks.

REVERSE.—Apparently a figure is intended, but it is very indistinct: it seems to represent HANUMÁN. The figure on the obverse allies it to the three preceding, and the reverse would be an appropriate accompaniment to the person of RÁMA.

The plate is from a drawing of a Coin in the Cabinet of the late Mr. SEYMOUR: the specimen is of rude execution.

PLATE I. FIGURE 16.

A SILVER COIN.

OBVERSE.—A figure apparently intended for a female, with the bow and trophy or banner of Nos. 5 and 7, &c. and characters.

REVERSE.—Sitting figure, apparently the same as in Figures 12, 13 and 14.

This Coin is most probably of the same family as the foregoing, although the sex of the principal figure differs, and the Coin is of ruder execution. It is taken from a drawing of a Coin in the Cabinet of the late Mr. EDWARDS.

PLATE I. FIGURE 17.

A GOLD COIN.

OBVERSE.—A male figure mounted on a mule or ass: the costume, and particularly the cap, is that of a Hindu mendicant, a *Bairagi* or *Gosain*. These characters are on the margin [illegible], which resemble those on the *Delhi* pillar, and on some of the preceding Coins: the second and fourth are in some inscriptions स and त or भ.

REVERSE.—A female figure precisely like that in Figure 12: the relative situation of the impression differs, and the figure is lower and more on one side: the symbol is therefore almost excluded, but it appears to have been the same: the characters are similar, and are evidently meant for ancient Nágarí: they are श्रीप्रकी, and the first may be read श्री प्रकी—but it is not easy to conjecture what sense even if completed to *Prakírtti*, fame, should be attached to the legend.

The Natives call this Coin, arbitrarily of course, the Coin of HIRANYAKASIPU: it is allied to the preceding by the figure and characters on the reverse. The drawing is from the original, which I obtained at *Kanoj*.

PLATE I. FIGURE 18.

A GOLD COIN.

OBVERSE.—A man on horseback.

REVERSE.—A female seated in profile, and feeding what appears to be a peacock: there are some characters in the margin.

This Coin is not apparently allied to any of the preceding, and is of very questionable character. It is taken from a drawing of a Coin said to belong to Mrs. WHITE, of *Futtehgerh*.

PLATE I. FIGURE 19.

A GOLD COIN.

OBVERSE.—A female figure in profile, seated on a *morah*, or stool of basket-work: a rod or sceptre is behind her, and

on the left are characters, [illegible] : she has the halo round her head: her right arm is extended, and the hand seems to hold some such article as in Figures 12 and 13.

REVERSE.—A male figure seated in a manner common amongst the Hindus on a seat with a back: his left arm appears to rest upon a pillow: he has a halo round his head, and large ears: on his left are characters [illegible].

The plate is from the drawing of a Coin belonging to the same proprietor as the last.

PLATE I. FIGURES 20, 21 and 22.

GOLD COINS.

The first of these is from a drawing of a Coin found in *Behar*, by the late Dr. HAMILTON: the second is from a Coin in my possession, procured at *Kanoj*. They are very rude and fantastic, and of uncertain origin, and bear some resemblance to the uncouth Coins of the *Seljuk* and *Turkoman* princes of *Persia* and *Syria*. The third is from a Coin also procured by me at *Kanoj*—a rude and imperfect Coin, but bearing some analogy to the Copper Coins at the foot of the next plate.

PLATE II. FIGURES 23, 24 and 25.

No. 23.—A COPPER COIN in the possession of Mr. PRINSEP, procured at *Benares*.

OBVERSE.—A head with a cap or tiara and fillets: one arm apparently is extended.

REVERSE.—A man with a similar head-dress, mounted, and extending one of his arms.

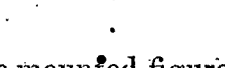
No. 24.—A Drawing in the Society's Collection, from a Copper Coin in the Cabinet of the late Mr. Seymour.

Obverse.—As before, but the impression is more distinct: the head-dress is a sort of crown, and the hand holds a sceptre: there is an appearance of characters round the margin, but they are probably only parts of an ornamental border: behind the head is the symbol or symbol noticed on so many of the foregoing specimens.

Reverse.—The mounted figure as before: the symbol is repeated: there is a circular legend, but the characters are imperfect: they have some appearance of Greek very rudely cut. The words ΒΑΣΙΛΕΥΣ ΒΑΣΙΛΕΩΝ may be conjectured as part of the inscription.

No. 25.—A Copper Coin in the Society's possession, procured by Lieutenant Burnes, in the vicinity of *Mánikyála.*

Obverse.—A head with rays, but apparently no cap or crown: in other respects, as the position of the hand and sceptre, and in the symbol, it resembles the two preceding Coins.

Reverse.—The mounted figure as in the two last, but of very superior execution: the hand appears to hold something, perhaps a hawk: the same symbol is repeated, and there is a legend round the margin  , which may be conjectured to be intended for ΒΑΣΙΛΕΥΣ ΒΑΣΙΛΕΩΝ, as in No. 24, but several of the characters are more distinct, and are undoubtedly Greek.

Two engravings of a similar Coin are given in the Plate published in the Transactions of the Royal Asiatic Society of the Coins belonging to Colonel TOD. The numbers are omitted, but they constitute his second series. Colonel TOD appears to regard them as Coins of "MITHRIDATES, his successors, or a minor dynasty in India," (Transactions R. A. S. Vol. I. p. 340,) although he notices their general resemblance to the medal of EUCRATIDES, thus described by BAYER,—Caput tectum est galeâ, sub ea frontem diademate stringi fasciæ argumento sunt, quæ circum cervicem fluctant. In aversa duo equites cumtiarüs Bactrüs, ramis palmæ et sarissis. Inscriptio ΒΑΣΙΛΕΟΣ ΜΕΓΑΛΟΥ ΕΥΚΡΑΤΙΔΟΥ. We have in two of our Coins, and in Colonel TOD's, the helmeted head and fasciæ: and in all three, one horseman with the Bactrian fillets, but no spear. Colonel TOD says, that on his Coin the extended arm holds a hawk, but it is not clear what the object is in our Coins. The general character of the head is Grecian—that of the Equestrian figure Parthian or Bactrian. The symbol is not noticed in BAYER's description. Colonel TOD calls it apparently the sacerdotal instrument for feeding the sacred fire. There can be little doubt that they are Bactrian Coins, and it is only a question to what reign or period they belong. SCHLEGEL is probably correct in referring them to the interval between the death of EUCRATIDES and the subversion of the Bactrian kingdom.—*Journal Asiatique, November*, 1828.

PLATE II. FIGURES 26, 27, 28 and 30.

These are different specimens of the same Copper Coin.

OBVERSE.—A man in a close tunic, having on his head a high cap with fillets: the general character is the same as that of the figure on the Gold Coins, Plate I. Figures 2, 3, &c., and so is the attitude, the right arm being extended, either grasping a trophy or presenting an oblation on a fire-

altar: a trident stands on his right, and a sword or club appears to be attached to his left: an inscription occupies the whole margin, the first part of which is like the following, [illegible]. This is tolerably distinct in No. 26 only: in the others the letters are obliterated.

REVERSE.—A female figure standing in front of a bull, in the 26th figure is very distinct; it is less so in the others: the bull is characteristically Indian, having the hump on his shoulders: an inscription similar to that on the obverse occurs: above the tail of the bull also recurs the symbol so frequent in the preceding Coins,—the key with three points.

A Coin exactly similar to these is the first of the third series of Colonel TOD's plate, who thus describes it—"No. 10, represents a priest or king sacrificing: his head is adorned with the high cap of the Magi, and he is feeding the flame on a low altar: a club is placed in his left: of several in my possession, though we distinctly read of the King of kings preserver, and on another of the Great King of kings, yet no proper name can be discovered: on the reverse is the sacred bull with a man, perhaps the sacrificing priest, and the epigraphe is in the Sassanian character." Colonel TOD assigns the Coins to the successors of MITHRIDATES, like the preceding. SCHLEGEL's Commentary upon Colonel TOD's Coin, the epigraphe of which, as it appears in the plate, is very legible, discovers in the characters preceding ΒΑϹΙΛЄUSΒΑϹΙΛЄΩΝ the name ЄΔΟΒΙΓΡΙϹ, EDOBIGRIS, which he regards as the appellation of a Tartar Khan, one of the Indo-Scythian, who succeeded to the domination of the Bactrian kings, and ruled over the provinces along the *Indus*, from the *Punjab* to the Gulph of *Cambay*, about the commencement of the Christian era. Colonel TOD considers them to be of Parthian origin, whilst the Bactrian kingdom was subject to

Parthian kings, and the costume of the principal figure and the worship of fire, if that is the subject of the die, appear favourable to his view. It is by no means clear, however, that a fire-altar is intended to be represented, and the general effect is more that of a military trophy, indicative of the Greek or Scythian conquest of *India*. The symbol belongs to *Bactria*, if, as is most likely, No. 1 be a Bactrian Coin. The name, it is true, is of a barbaric aspect, if rightly decyphered; but SCHLEGEL admits that he can make nothing of the letters which immediately precede it, IHPNIЄIC, and his separation of *Edobigris* from them cannot be unhesitatingly and unreservedly admitted. The character of the reverse, however, leaves no doubt that whether Parthian or Indo-Scythic, the Coin was the work of a prince, of whose dominion the seat was *India*.

The first of these specimens is from a drawing of a Coin in the Cabinet of the late Mr. EDWARDS: the second is in the possession of Mr. PRINSEP, and was found at *Chunar:* the two last, with several others less distinct, are in the Society's collection.

PLATE II. FIGURE 29.

A COPPER COIN.

This, although smaller and of ruder execution, appears to be allied to the preceding, especially by the reverse, on which we have the standing figure and the bull. The Coin is one of many found amongst the ruins of *Dipaldinna*, by the late Colonel MACKENZIE.

PLATE II. FIGURES 31, 32, 33 and 34.

COPPER COINS.

OBVERSE.—A male figure, resembling, in costume and attitude, that on the preceding Coins,—the right arm, however, is extended nearly in a straight line, and in place of the trophy, or altar, is the common symbol, or key with four

points, . In one specimen, figure 31, there are characters which look like the Persian numerals 261190 ۲۶۱۱۹۰ .

REVERSE.—A man riding on an elephant: there are traces of characters or of an ornamented margin, it is not possible to determine which, on some of the pieces.

Colonel TOD has a Coin, No. 12, of his plate, which corresponds with the Coins here described, the differences in the detail of the figure being, perhaps, those of the impression of the Coin, or the accuracy of the drawing. The figure on the obverse is supposed by SCHLEGEL to be *Siva* with four arms; but this may be doubted, the marks on the left shoulder being nothing more than part of the trophy with which we have met before,—a staff surmounted by a bird. Both Colonel TOD and SCHLEGEL refer this Coin to the Indo-Scythic kingdom, and it evidently belongs to the same series as several of the preceding, attributed to the same origin. As to the characters on No. 31, supposing them to be Persian cyphers, they might have been cut subsequently, as it is exceedingly common for Native bankers and others to make such marks as they think proper, even on the current Coins.

Of the Coins now engraved, two belong to the Society, and two to Mr. JAMES PRINSEP, who has several others. He states that they are very common in Upper *India*, particularly about *Benares*, *Mirzapore*, and *Allahabad*. The Natives call them Téna muï Pysa, the meaning of which I have not been able to ascertain.

PLATE II. FIGURE 35.

A COPPER COIN.

OBVERSE.—A male figure leaning on a staff or spear with one hand, and extending the other as to grasp a trophy: on the margin are some characters.

REVERSE.—An upright figure, with the right arm extended: below the arm is the symbol with three points: the head appears surrounded by a halo, and on the left are characters distinct enough, HPΦ.

This Coin is one of the three found by General VENTURA in the Tope *Mánikyála*, of which impressions were sent to the Society. It is connected, by the costume and attitude of the figures, with many of the preceding Coins, and is evidently the same as the No. 11 of Colonel TOD's plate, one of the series referred by him to the successors of MITHRIDATES, or a minor dynasty in *India*. The site in which this Coin has been discovered, is an argument in favour of its Indo-Scythic origin.

PLATE II. FIGURE 36.

A COPPER COIN.

OBVERSE.—A figure which, though indistinct, corresponds in character with that on the preceding and other Coins.

REVERSE.—A figure apparently in a gymnastic attitude.

This Coin is in the possession of the Society, and agrees exactly with No. 13 of Colonel TOD's plate: his drawing has the symbol on the reverse.

PLATE II. FIGURES 37 and 38.

COPPER COINS.

OBVERSE.—A man in a long tunic, erect, and holding a spear in his right hand: he has a singular head-dress, but in the first figure it is apparently the Mogul morion, or iron cap, with the veil of mail thrown over it, and hanging down on each side: in the second figure it is less marked: there are square characters round the margin.

REVERSE.—A female figure in a stole: on her right, in the first Coin, is a conch shell—on her left the branch of a tree. In the second specimen a flower or lotus is substituted for the shell, and on the left an emblem perhaps intended to be the symbol in the preceding Coins.

There can be little doubt that these are Indian Coins, or Indo-Scythic, for the figure on the reverse is designated as LAKSHMI by both the emblems, the conch and the lotus.

The first of these is in the Society's Cabinet, the second is engraved from the drawing of a Coin in the possession of the late Mr. EDWARDS.

PLATE II. FIGURES 39 and 40.

COPPER COINS in the Society's possession, presented by Dr. TYTLER, and procured by him at *Allahabad.*

OBVERSE.—Of both: a figure identifiable, by attitude and costume, with several of the preceding.

REVERSE.—A figure dancing, perhaps SIVA, is on one of them: on the other is a figure seated, but the Coin is much worn.

PLATE II. FIGURES 29 and 41.

COPPER COINS in the Society's possession, found amongst the ruins at *Dipaldinna*, by the late Colonel MACKENZIE.

The figures on the obverse are of similar character with the preceding: the reverse of No. 29 has the standing figure and bull connecting it with the series 26, &c.: the head of the bull is in an opposite direction: a female figure, apparently with cymbals in her hands, is on the reverse of No. 41.

PLATE II. FIGURE 42.

DRAWING of a COPPER COIN in the Cabinet of the late Mr. SEYMOUR.

OBVERSE.—A figure like those of the preceding, with a different and peculiar head-dress: the usual symbol with four points.

REVERSE.—A half-length figure, apparently a female: characters like the Nágarí व and द reversed.

The Coin is of very rude execution, but appears to belong to the same family as the rest, of which it may possibly be an imitation.

PLATE II. FIGURES 43, 44, 45, 46 and 47.

COPPER COINS.

OBVERSE.—A non-descript figure, but which may possibly be intended for the same person as is represented in figure 26, &c., only very rudely executed.

REVERSE.—A figure, the purport of which it is not easy to determine. It may be intended for a scorpion or a crab, or a rude outline of a body with legs and arms, like the type of JAGANNATH. In figures 43, 44 and 45 Devanagari letters are distinctly legible.

These Coins are not uncommon: one has already occurred, No. 22, in gold. Of the Copper, one, No. 46, belongs to the Society: Nos. 44, 45, and 47 to Mr. PRINSEP: they were dug up at *Kylie*, in the *Saugur* district. No. 43 is an impression of one found in the Tope *Mánikyála*, by General VENTURA.

The circumstances under which these Coins have been found, are favourable to their early origin, whilst the characters upon them indicate their being Hindu. On figure 43, the first element is a common form of the prefix *Sri*, and is followed by the old Nágarí type of म: the next may be द, forming the usual proem to the title of a king, *Srimad*, auspicious. In figure 44, we have what may be conjectured to be वप्रत; and in 45, what looks like वप्र. It is not very safe to attempt to make a word or words out of such meagre and uncertain data; but in the absence of any other conjecture, I may hazard a supposition that the legend may have been Srimad Deva Pratápa, a legitimate appellation of a Hindu prince. No. 44 may also be read चक्र व—and the obverse of 43 श्री महा, in which case we might have *Sri mahá* (Raja) *Chakra*—also part of a Hindu name or title—CHAKRAVERMÁ is a designation of frequent occurrence. The rudeness of their execution renders it probable that these Coins date posterior to the last traces of Greek workmanship, and they are probably the indigenous currency of the Indian princes of the *Punjab*, after the downfall of the Indo-Scythian power in that direction.

PLATE III.

This and the two following plates contain series of Coins of a character differing evidently from these which have preceded: some of them admit of verification, and belong to Hindu dynasties of a comparatively recent date. It is not unlikely that those, the appropriation of which must be left undetermined at present, are also the Coins of Hindu princes who have reigned in similarly modern times.

PLATE III. FIGURES 48, 49 and 50.

TWO GOLD COINS AND ONE COPPER.

OBVERSE.—A sitting figure, in the first and last of rude execution, but more carefully executed on the second. The character is that of DURGA, but the figure is probably intended for LAKSHMI as the princes of the dynasty to which it may be referred appear to have been *Vaishnavas*, from the names of several of them.

REVERSE.—An inscription in Devanagari letters on the first and third, particularly on the latter, is clearly, although not entire, intended for श्रीमद् गोविन्द चन्द्र देव *Srimad Govind Chandra Deva*, and appropriates these Coins to the dynasty of Rahtore princes, who reigned from the beginning of the 11th to the end of the 12th century at *Kanoj*. GOVINDA CHANDRA was the sixth (Asiatic Researches, Vol. XV. 461). In the inscription on the second piece, there is some indistinctness, but it is perhaps designed for श्रीमद्वि जय देव VIJAYA DEVA, the successor of GOVIND CHANDRA.

One of the Gold Coins belongs to Mr. PRINSEP, being one of two dug up in the district of *Azimgerh:* the other Gold and the Copper Coin were procured at *Allahabad*, by Mr. R. TYTLER, and presented by him to the Society. The Gold Coins are by no means uncommon; ten of them were lately sent to the Calcutta Mint as part of a remittance for re-coinage.

PLATE III. FIGURE 51.

A GOLD COIN.

OBVERSE. — A female figure, with sundry indistinct emblems.

REVERSE.—An inscription much worn and indistinct.

This Coin was procured by me at *Kanoj*, where it was said, without any satisfactory reason however, to be a Coin of BHOJA, king of *Dhár*.

PLATE III. FIGURE 52.

A GOLD COIN.

OBVERSE and REVERSE the same, being a Nágarí inscription of the words *Rám Nám*.

This was procured also at *Kanoj*, and was there attributed to JAYA DÉVA, the last prince of that state. The inscription would designate a worshipper of VISHNU.

PLATE III. FIGURES 53 and 54.

SILVER COINS.

OBVERSE.—A figure of the *Varáha*, or Boar incarnation of VISHNU.

REVERSE.—An inscription in Nágarí, containing the letters मद-दे-राह, part, no doubt, of *Sri Mad deva Varáha*.

One of these Coins is in my possession, the other in that of Mr. PRINSEP: the latter was dug up near *Sultanpur*, *Benares*, with several of the next series. The Society has a number of these Coins, but less perfect than the specimens here given.

PLATE III. FIGURES 57, 58, 59, 60 and 61.

GOLD COINS.

OBVERSE.—Indistinct marks, some of which appear to be intended for the same figure as that on the preceding

pieces, or the *Varáha* incarnation: two of them have the letter ढ reversed.

REVERSE.—Emblems of unknown import.

A number of these Coins belong to the Society, and several are in Mr. PRINSEP's possession: they have been found in various places, some along with the preceding, indicative of their being current at a similar period.

PLATE III. FIGURES 63 and 64.

SILVER COINS.

OBVERSE.—An imperfect inscription, of which the letter क alone appears on the first: on the second it is preceded by a व, and is compounded with another letter, either र or ड: part of the letter द, the initial of देव, perhaps follows, or it may be supposed to represent वेंकट, a name of VISHNU in the south of *India*, and thence borne by many princes, especially the Rajas of *Vijayanagar*.

REVERSE.—Indistinct marks.

These Coins are also not uncommon, but they are of rude execution, and much worn: they are probably of the same period as the preceding, in company with which they have been occasionally dug up.

PLATE III. FIGURE 65.

A SILVER COIN.

One of two dug up at *Kotah*, and in Mr. PRINSEP's possession: the marks upon them are too indistinct to admit of any conjecture as to what they represent.

PLATE III. FIGURES 68 and 69.

COPPER COINS.

OBVERSE.—Various emblems of uncertain import.

REVERSE.—An elephant, a small figure in front, and a sword underneath.

There are several of these in the Society's Cabinet: two of them were found in the ruins of *Kaira*, an ancient city on the banks of the *Gogra:* one in Mr. PRINSEP's possession was found in making the new *Allahabad* road. The Natives call them the Coins of MÁNDHÁTÁ, a prince of *Ayodhya*, in the *Treta* or second age. They are probably the Coins of some Hindu prince of *Oude*, in a comparatively recent period.

PLATE III. FIGURE 70.

A COPPER COIN in the possession of Mr. PRINSEP, found in making the new *Allahabad* road.

PLATE III. FIGURES 71, 72 and 73.

COPPER COINS.

OBVERSE.—An uncouth figure, perhaps intended for *Hanumán*.

REVERSE.—Dots and marks, some of which look like Arabic characters.

These Coins are found in various parts of *India*, in considerable numbers: they occur sometimes of silver.

PLATE IV.

The Coins contained in this plate may be referred to the dynasties of the south of *India*, especially the princes of *Vijayanagar*, and are not therefore of very high antiquity: several of them have been delineated by Major MOOR; but we can scarcely admit his notion of them to be correct, when he states that there can be little doubt of most of them having been struck as early as the age of VIKRAMÁDITYA.

PLATE IV. FIGURE 74.

A GOLD COIN.

OBVERSE.—Concave, RÁMA crowned, SÍTÁ sits by him: LAKSHMANA is on his right, and BHARATA on his left: other figures complete the groupe. There are characters below, but they are of doubtful import, although they offer some analogies to old forms of both Nágarí and Grandham letters, and may possibly form the words रामसभा, the assembly of RÁMA. It is possible that they have not been very carefully copied in the drawing.

REVERSE.—Convex, a figure of HANUMÁN, with characters that may be read *Srí Raméswara*.

Coins of this description are of not very rare occurrence, apparently, in the south of *India*, where they are called *Ráma Tankas*, or *Ráma Máras*. The present drawing is copied from a drawing of a Coin belonging to the late Colonel MACKENZIE, which was obtained at *Seringapatam*, having been, like that delineated by Major MOOR, No. 10 of his plate 104, part of a Collection that had belonged to TIPU SULTAN. According to the popular belief, these coins were struck by RÁMACHANDRA himself, but the

Ráma Tankas are enumerated in the *Ráma Rájá Charitra,* amongst the Coins paid to his troops by RÁMA, the last prince of *Vijayanagar,* and they were no doubt coined under his government. It is not unlikely, as Major MOOR supposes, that these hollowed Coins were never generally current, but were struck for particular occasions, as offerings to Deities or distribution on festival occasions to the leading individuals of the Royal Court.

PLATE IV. FIGURE 75.

A GOLD COIN.

OBVERSE.—Concave. The coronation of RÁMA as before: characters below.

REVERSE.—Convex. HANUMÁN as before, but in a different attitude.

This Coin is also copied from a drawing of a Coin made for Colonel MACKENZIE. It is the same as that figured by Major MOOR, Plate 104, No. 10: the characters are not precisely the same in the two plates, and offer in neither a decypherable legend, although it might be guessed to signify something like *Sri Rámachandrasya Sabhá.*

PLATE IV. FIGURE 76.

A GOLD COIN.

OBVERSE.—Convex. Four figures, representing probably RÁMA, attended by his three brothers LAKSHMANA, BHARATA, and SATRUGHNA.

REVERSE.—Concave. RÁMA and SÍTÁ seated, attended by HANUMÁN and LAKSHMANA, the latter holding the imperial *Chattah* over his brother's head.

The engraving is from the drawing of a Coin in the possession of Colonel BOWZER.

PLATE IV. FIGURE 77.

A GOLD COIN.

OBVERSE.—Concave. RÁMA's coronation. HANUMÁN is below the throne.

REVERSE.—Convex. A double triangle, considered as the *Ráma Yantra*. It is surrounded by a circular border, in the departments of which are characters, probably cyphers conveying a *Mantra*, or mystical formula, sacred to RÁMA.

From a drawing of a Coin in the MACKENZIE Collection.

PLATE IV. FIGURE 78.

A GOLD COIN.

OBVERSE.—Concave. RÁMA crowned: the lower part of the Coin is embellished with a kind of flower.

REVERSE.—Convex. HANUMÁN in an attitude of praise or supplication: one Nágarí letter न appears on the margin.

This is also from the drawing of a Coin in the MACKENZIE Collection: the originals of this and the others belonging to that Officer are now in the Museum at the India House.

PLATE IV. FIGURE 79.

A GOLD COIN.

OBVERSE.—The usual types of JAGANNÁTH, attended by BALARÁMA and SUBHADRÁ.

REVERSE.—An inscription in Déva Nágarí श्री वीरवर पुरुषोत्तम देव १५३४. Sri vira vara Purushottama Déva, 1534.

This Coin is the most satisfactory one in our whole series, specifying the prince and date. PURUSHOTTAMA DEVA was Raja of *Orissa* from A. D. 1478 to 1503, and the Samvat year 1534 corresponds with the year of his accession.

The engraving is taken from the drawing of a Coin in the possession of the late Mr. SEYMOUR.

PLATE IV. FIGURE 80.

A GOLD COIN.

OBVERSE.—Dots.

REVERSE.—Part of an inscription, of which the last part is राय Raya, so that it is most probably a Coin of some one of the *Vijayanagar* princes, who commonly bore that title, or it may be a Coin of DEVA Raya, who ruled over that principality about 1430.

It is copied from a drawing belonging to Colonel MACKENZIE.

PLATE IV. FIGURE 81.

A GOLD COIN.

OBVERSE.—Four fish.

REVERSE.—An inscription in square characters.

This is copied from a drawing in the MACKENZIE Collection, and taken probably from one of those described by Major MOOR, who calls

them *Arjuna Huns*, and states that about twenty of them were found in a box in the palace at *Seringapatam*, with a memorandum in Persian, the purport of which was that these Matsya, or Fish-marked Coins, were the Coins of ARJUNA, and were seven thousand years old. The letters are termed *Bálabandi*.

According to a memorandum accompanying the drawing, these Coins are attributed to PARÍKSHIT, the son of ARJUNA, and successor of the PÁNDAVAS on the throne of *Hastinapur*, an origin as little probable as that assigned to them in the Persian paper. The *Bálabandi* characters, which term Major MOOR was unacquainted with, are considered to be the old or primitive Mahratta letters, and were probably a modification of Nágarí. What the characters on our Coin are intended for, it is not easy to guess, but on the reverse of one of Major MOOR's Coins, Plate 104, Figure 9, they may be designed for परीक्षित् देव, although very rude and unsatisfactory. On the reverse, however, of his other specimen, Figure 11, is an inscription similar to one on the reverse of our figure 90—a coin assigned to VIRA NARASINHA DEVA, Raja of *Vijayanagar*. In that case, these Matsya Huns must abate something of their pretensions to antiquity. It seems not impossible, however, that they are Coins of the Belal Rajas of *Canara*, or even of the Wadeyars of *Mysur*. One account noticed in the list of Coins in the Mackenzie Cabinet (Mackenzie Collection, Vol. 2, App. p. 225,) ascribes them to the Pandya Rajas, or princes of *Madura*.

PLATE IV. FIGURES 82, 83, 84 and 85.

GOLD COINS.

OBVERSE.—The anterior part of the body of an elephant.

REVERSE.—A scroll.

These Coins are not unfrequent, and are the work of the Gajapati princes of *Orissa*, who reigned from the eleventh to the sixteenth century.

Several of them are in the Cabinet of the Society, and others were in the possession of Colonel MACKENZIE.

PLATE IV. FIGURES 86 and 87.

GOLD COINS.

OBVERSE.—Convex. Blank.

REVERSE.—Concave. A flower with characters on the margin: the two together furnish श्रीश्री महादेव.

These are taken from drawings in Colonel MACKENZIE's possession, and are described as having been found at *Tripêti* and *Hanâver*. I rather suspect they are the same as those termed in the Catalogue *Kamalá Mudrás*, and there said to have been dug up at *Banawasi*.

PLATE IV. FIGURE 88.

A GOLD COIN.

OBVERSE.—A figure of *Varáha*.

REVERSE.—A legend, which, when completed, is no doubt श्रीप्रतापकृष्ण राय.

This is a *Bijnagar Hun*, of the time of KRISHNA RÁYA, who ruled in the first part of the 16th century, or 1508-1530. It is drawn from a Coin in my possession. There were several in the Mackenzie Cabinet.

PLATE IV. FIGURE 89.

A GOLD COIN.

OBVERSE.—Uncertain marks, perhaps intended to form a figure.

REVERSE.—A legend, same as before.

This is also a *Vijayanagar Hun*, or *Pratápa*, from the title Sri Pratápa. It is copied from a drawing belonging to Colonel MACKENZIE.

PLATE IV. FIGURE 90.

A GOLD COIN.

REVERSE.—A figure standing on an animal, said to be VISHNU on a lion, typical of the *Narasinha Avatár*.

OBVERSE.—Characters which, by Colonel MACKENZIE's Pundits, were asserted to be Hala Canara, expressing the name NARASINHA, or SRI VÍRA NARASINHA DEVA, Raja of *Vijayanagar*, at the end of the 15th century.

PLATE IV. FIGURE 91.

A GOLD COIN.

OBVERSE.—A figure seated.

REVERSE.—Characters undecypherable, with an ornamented border.

The plate is taken from a drawing belonging to Colonel MACKENZIE: it is probably of the *Vijayanagar* or late currency.

PLATE IV. FIGURES 92, 93, 94, and 95.

GOLD COINS.

OBVERSE.—A double-headed figure of GARURA, holding an elephant in each beak and each claw.

REVERSE.—A legend in which the first part is clearly enough श्रीप्रताप SRI PRATÁPA: the following letters are less distinct, but are apparently intended for वीर राय

In the Catalogue of Colonel MACKENZIE's Coins, the GARUDA MUDRAS, are ascribed to VIRA RAY of *Coimbatur*. The drawings are from that Collection.

PLATE IV. FIGURES 96, 97, and 98.

GOLD COINS.

OBVERSE.—A figure of VISHNU as VENKATA RAMANA.

REVERSE.—On two of them a legend; the first part of which in one is distinctly श्रीवेङ्कटस्य; on the third, the reverse is blank.

These Coins are not uncommon: the drawings are made from some in the possession of the Society or in mine: they were struck by VENKATAPATI, Raja of *Chandragiri*, in the beginning of the seventeenth century, after the overthrow of the *Vijaynagar* kingdom. Besides these specimens of the Coins of the *Vijayanagar* dynasty, there are others still current in the South of *India* in very considerable numbers, which bear at least the names of some of the princes, particularly KRISHNA Raya: some of these are given by Major MOOR, and others are noticed in the Catalogue of Colonel MACKENZIE's Coins. See Mackenzie Collection, Vol. 2. Appendix.

PLATE V. FIGURES 101 to 108.

SILVER COINS.

These are a few specimens of Coins frequently found by the late Colonel MACKENZIE, in all parts of *India*. They are thus described in the Catalogue of his Coins.

"These are all of one description; they are of an irregular form, being square, angular, round, oval, &c., they bear no inscription, are not unfre-

quently quite plain, and in any case have only a few indistinct and unintelligible symbols: that of the sun or a star is most common and those of the Lingam, the crescent, and the figures of animals, may be traced: these Coins are very numerous throughout *India*, but particularly in the South; their weight varies."

PLATE V. FIGURES 109 to 113.

COPPER COINS.

OBVERSE.—A rude figure, apparently intended for HANUMAN.

REVERSE.—In some an equally rude figure, with legend: that of figure 111 appears to be SRI RÁMA NÁTHA.

These are delineated from some in the possession of the Society, being a few of those collected by Colonel MACKENZIE at *Dipaldinna*, and presented to the Society by the Government. No. 111 is copied from a drawing of one found at *Kandya*, in *Ceylon*.

PLATE V. FIGURES 114, 115, and 116.

COPPER COINS.

OBVERSE.—A figure of rather a non-descript animal.

REVERSE.—Rude unintelligible marks.

These are from the same collection as the last, being part of the seven hundred and ten old Coins found at *Dipaldinna*. (See Mackenzie Collection, Appendix 238.)

PLATE V. FIGURE 117, &c.

LEAD COINS.

These are copied from drawings in the possession of Colonel MACKENZIE, of Coins of Lead found at *Mahabelipuram* and *Nellore*. Various

figures are stamped upon them, especially the *Sinha* of DURGA and the Bull of SIVA, but there is nothing else which illustrates their origin, or renders them of any interest or value.

The result of the investigation of such materials as we possess towards a history of *Hindu* Numismatics, must be admitted to be meagre and unsatisfactory. With exception of a few of comparatively modern origin, no one piece has been ascribed to any individual reign, and even the general appropriation of any number rests upon mere conjecture. At the same time, the Coins perhaps admit of being classed under different heads, and may be considered as contributions to the illustration of various political revolutions in *India*.

The first series, consisting of the Copper Coins, Plate II, Figures 23, 24 and 25, are wholly of a Greek or mixed Grecian and Persian character, and belong apparently to the Bactrian princes of Greek or Parthian descent: they are connected with the two following series by the common symbol.

The second, and much more extensive series, comprehending most of the Coins of Plates I. and II., bears a mixed character, and combines Indian figures and emblems with Scythian or Parthian costume, indicating the origin of the Coins in the reigns of those princes, whilst they occupied the western provinces of *Hindustan*. In confirmation of this view of their origin, it may be observed, that neither on the older nor comparatively modern remains of Persian antiquity, neither in the sculptures of *Persepolis* or *Nakshi Rustam*, do we find any decided resemblances in costume, characters, or minor details, such as to authorise a conjecture that these

Coins belonged either to the old Kaianian dynasty of *Persia*, or to the Sassanian kings. The remarkable symbol, the high but conical cap, not to speak of the more decidedly Hindu emblems, are not visible in the Plates of LE BRUYN, CHARDIN, NIEBUHR, nor in the more recent delineations of MORIER, OUSELEY, and PORTER. If the object which has been supposed to represent a fire altar, be what it is supposed, it differs widely from the altars on both the Arsacidan and Sassanian Coins. If however it be held in the hand it can scarcely be an altar, and that such is the case, is rendered probable by the sole exception I have met with to the assertion that I have not found any thing analogous to the details of our Coins, as on Plate 156 of LE BRUYN, he gives a sculptured fragment found at *Persepolis*, a hand grasping a very similar article to that on several of our plates. He offers no conjecture as to what it is meant to represent, though from a figure of the same, on a smaller scale, in KERR PORTER, Plates 47 and 49, it appears to have been a kind of vase or bucket.

The third series, that with the archer on one face, and the sitting figure on the other, is apparently *Hindu*, but that it has some connexion with the preceding is evinced by the presence of the common symbol, and in some of the specimens by the workmanship, which is of a superior description, and may be indebted to Greek art for its superiority.

Passing over single specimens of uncertain character, we may perhaps consider No. 28 of Plate 1 and 43, &c. of Plate 11, as constituting a fourth series of rude, and probably purely *Hindu* fabric. It is worthy of notice however, that a representative of this class, as well as of two of the preceding, was found in the Tope *Manikyala*, and so far we may refer all the four orders to a prior or cotemporaneous date with that monument, and possibly, therefore, to the ages immediately preceding and following the æra of Christianity.

The fifth series belongs to a much later period, the 11th and 12th centuries, or the times coeval with the two *Mohammedan* invasions.

Subsequently to that date few *Hindu* princes in Gangetic *Hindustan*, were allowed to strike their own Coins, and it is to the south of *India*, therefore, that we must look for a further supply. These may be regarded as forming a sixth series, the far greater proportion of which belongs to the Sovereigns of the last independant Hindu kingdom of any consideration, that of *Vijayanagar*.

The details of these six classes, and the formation of others, must be left to future enquiry, the conduct of which, it is hoped, will have been facilitated by the researches now submitted to the Society.

Account of the Excavations of Tope Manikyala, by Lieutenant-General Ventura.

Having adverted in former pages to the discovery of ancient Coins in the *Punjab* by General Ventura, it may be satisfactory to notice the circumstance at more length on the present occasion, and, in justice to the first explorer of the monument, in his own words.

Letter from General Ventura *to Messrs.* Alexander and Co.

Lahore, 3 *Avril*, 1830.

Messieurs,

Dans le courant du mois d' Avril dernier, me trouvant campé aux environs de *Manekiala*, (ville du cheval aux yeux blancs,) sous laquelle reposent les décombres d' une grande cité, Je fus poussé à la suite de la découverte faite précédemment sur les lieux de médailles portant des inscriptions Grecques, à entreprendre les fouilles d' une coupole, dont la

hauteur & la circonférence prodigieuses, les ruines dont elle est entourée, révélent un de ces monumens de l'antiquité, sur les quels le ravage des siécles, n'ayant qu'une prise secondaire, destinés par leurs fondateurs à transmettre aux âges futurs la mémoire du temps ancien. J'ai poursuivi ces fouilles pendant deux mois. Desireux aujourdhui de mettre à jour le mémoire & le résultat de ce travail gigantesque, J'ai l'honneur, Messieurs, de vous adresser un état présentant la situation du lieux, l'emploi du temps & les trouvailles faits; Je vous prie, d'en donner connaissance à la Societé Scientifique de Calcutta, & apres l'avoir fait traduire en anglais, Je vous serai obligé de le faire insérer dans les Journaux de cette ville.

Mon opinion particuliére basée sur des conjectures, il est vrai, mais sur la présque certitude qu'un Roi seulement a pu ordonner un si grand travail, me porte a croire, que là a existé la ville de Bucephalia batie par ALEXANDRE en l'honneur de son cheval & que l'inscription que porte la seconde boite peut se rattacher aux événemens qui ont signalé le passage de ce grand Capitaine dans ces contrées.

Je recommande, Messieurs, à votre bienveillance le soin de me faire connoitre que vous aver bien voulu remplir mes désirs à cet égard.

Recevez la nouvelle assurance de ma consideration distinguée & de mon estime.

LE CHR. GENERAL VENTURA.

ETAT des travaux faits par M. Le Chevalier VENTURA, *Général d'Infanterie au Service de Maharadja* RANDJIT SINGH *Bahâdour, pour les fouilles d'une Coupole de Soixante quinze pieds de hauteur, sur Trois cent Soixante quinze de circonference, située à* Manekiala, *sur les Ruines d'une grande cité à quarante miles de Djilim (Ancien Hydaspe)* 32° *Latitude* 72° *Longitude méridien de Paris.*

Le 27 Avril, 1830. Les fouilles ont été commencées tout à fait au bas de la coupole du coté du midi, ou n'ayant rencontré que d'immenses décombres, l'issue n'a pu être pratiquée.

Le 28 ditto. Le chapeau de la coupole a été entamé; on a trouvé, a trois pieds sous terre, six médailles.

Le 1 Mai. On a découvert un carré parfait à douze pieds, tres bien établi au centre, bâti régulierement en pierres de taille & trés bien conservé; aprés avoir creusé dix pieds, on a trouvé une Médaille au milieu d'un bloc de terre.

Le 6 ditto. On a trouvé une Médaille en argent & six en cuivre à la profondeur de vingt un pieds.

Le 8 Mai. On a trouvé une Boite en fer qui a éte brisée par un coup de pioche; il y avait dans cette premiére Boite une seconde Boite en or, contenant une Médaille même matière, & une Bague idem, surmonté d' une pierre ou l'on découvre des caracteres, trois grandes Médailles en argent & trois petites, ún morceau de Rubis, le tout au bas du carré dont la batisse réguliere s'est terminée là.

Le 12 ditto. On a poursuivi les travaux jusqu' à la profondeur de trente-six pieds où on a trouvé une Médaille en cuivre.

Le 22 ditto. Comme on supposait qu' on ne trouverait plus rien dans le centre de la coupole à cause de la discontinuation du carré, on a fait une ouverture du coté du nord de la hauteur de six pieds sur la largeur de douze; on a poursuivi les travaux des deux cotés.

Le 25 ditto. On a atteint la profondeur de quarante cinq pieds, et c'est en ôtant une grosse pierre de taille qu' on a trouvé dessous une pierre carrée au milieu de la quelle était un trou rond, et au milieu de ce trou une Boite en cuivre et un cylindre, ayant à sa droite & à sa gauche nne petite ouverture: au centre du cylindre se trouvait un morceau de linge blanc dans lequel était enveloppé un morceau de cristal de roche travaillé et un autre petit cylindre cassé et en or.

Le 27 ditto. A la profondeur de cinquante quatre pieds on a trouvé une medaille en cuivre.

Le 29 ditto. On a trouvé un trou irregulier de la largeur de six lignes à la profondeur de soixante quatre pieds; on a découvert dedans une Bague en cuivre argentée, surmontée d' une pierre rouge, une medaille en cuivre & un *khar-mouré* (pucelage, *cypræa moneta)*: a dix lignes plus bas une bague en fer et trois medailles: le trou suivi dans la même direction.

Le 31 ditto. On a decouvert une immense pierre qui couvrait presque toute la surface: on a oté cette pierre et l'on a apperçu un petit Bassin bati en pierres & en chaux, d' un pied de hauteur & d' un de largeur; au milieu se trouvait hermétiquement fermés, savoir—

1°. Une Boite en fer contenant un liquide composé.

2°. Dans la Boite en fer, une seconde Boite en métal composé, ayant une pyramide au milieu du couvert et autour du couvert, une inscription: cette Boite contenait aussi un liquide composé, et cinq médailles.

3°. Dans la seconde Boite une troisieme en or, contenant un liquide composé, & mélangé avec une espéce d' ambre brisé, deux médailles en or, l' une grande & l' autre petite, & un morceau de fiscelle nouée.

Dans le même bassin & sur le même niveau, on a trouvé une collection de quarante quatre médailles en Cuivre.

Le 2 Juin. A trois pieds plus bas une médaille.

Le 3 ditto. A trois pieds plus bas six médailles.

Le 8 Juin, 1830. L' ouverture d' en bas et celle d' en haut se sont reunies, & l' on a trouvé la terre: les travaux ont été poursuivis jusqu' a vingt pieds en dessous du niveau de la coupole, sans rien trouver. Les pluies ont necessité la discontinuation de l' entreprise. M. VENTURA a l' intention de les continuer pour que les fouilles soient faites sur tous les points.

The letter having been communicated to the Society by Colonel YOUNG, General VENTURA was addressed for further information, in reply to which he sent to the Society a revised statement of his labours, in substance the same as the above, and impressions in wax of three of the Coins. From these again, a number of impressions were taken in biscuit by Mr. PRINSEP, and the Figures 1 of Plate I, and 35 and 43 of Plate II, delineated and engraved from the same. Subsequently similar Coins have been procured in the vicinity of *Manikyala* by Lieutenant BURNES: two of which he sent to Calcutta. One is not decypherable satisfactorily, but the other has been delineated and engraved as No. 25 of Plate II.*

Of the origin of these Coins, a conjecture has been already expressed. Coin 25, is probably a Bactrian Coin, two of the others are Indo-Scythic, or Coins of the princes who ruled in the *Punjab* after the downfall of the Bactrian kingdom, and one is the rude Coin of a Hindu sovereign.

Some of the impressions taken of the Coins in *Calcutta*, were sent to *Paris*, and a late number of the Journal Asiatique contains two short notices of them by M. REINAUD and M. J. SAINT MARTIN. The latter gentleman gives a particular description of our figure 1 Plate I, and

---

* A subsequent communication from Lieutenant BURNES, to whom a copy of the Plates I. and II. had been transmitted, states that all the Coins found at *Manikyala* were of a type analogous to Nos. 26, 27, 28, 29 and 30. He mentions also having found a Coin very like No. 26 at *Balkh*.

reads part of the inscription on the obverse NANOBAΘOY. . . . -PKIKOY— and on the reverse MANAOBA. . . .ΓO, but he remarks that a greater number of pieces and those in better preservation are necessary before any attempt can be made to interpret the Greek and Indian inscriptions observable on the Coins. He ascribes them, however, to Greek or Asiatic Princes, who inherited the authority of ALEXANDER's successors in the countries watered by the *Indus*.

With regard to the remarkable building at *Manikyala*, in or near which these Coins were found, it was first visited by Mr. ELPHINSTONE on his return from his mission to *Cabul*. A plate of it is given in his work. On the march from the *Indus* to the *Hydaspes*, a party from his camp set out on a search for the remains of *Taxila*, the capital of ALEXANDER's ally *Taxiles*, or more correctly *Taksha-silâ**, the name of the Hindu city which the late Colonel WILFORD conjectured was situated in this direction. The party met with no ruins or remains of an ancient city except this building, resembling a cupola in its outline, but which proved to be a solid structure on a low artificial mound. It was about seventy feet high, and one hundred and fifty paces in circumference, cased in most parts with stone, but in some parts apparently unfinished: some broad steps led to the base which was encircled by a moulding about eight feet high. This was surmounted by a perpendicular wall for about six feet from whence the building continued in a spherical form. Mr. ELPHINSTONE adds, "There was nothing at all Hindoo in the appearance of this building. Most of the party thought it decidedly Grecian. It was indeed as like Grecian architecture as any building which Europeans in remote parts of the country could now construct by the hands of unpractised native builders." The structure was termed by the natives, the Tope, the mound or tumulus of *Manikyala*. No opportunity offered for any examination of the Tope or

* Literally—Pierre de taille, as if the city was famous for its stone buildings.

its vicinity: the mission having to make the best of their way on their return.

Mr. ERSKINE, in a paper in the Bombay Transactions, on the Remains of the *Buddhists* in *India*, notices this building, and says of it "although its origin is unknown, yet in its hemispherical form and whole appearance it carries with it sufficient proof that it was a magnificent *Dagope* (a *Bauddha* shrine) constructed at a remote period by persons of the *Buddhist* faith."

There can be little doubt of the correctness of Mr. ERSKINE's conjecture as to the character of the monument. It is a well known peculiarity of the *Bauddha* religion, to enshrine relics of a *Buddha*, his hair, teeth, nails, &c. in solid masses of masonry,* and the caskets or boxes found in the present instances may have originally contained some such exuviæ. The existence of a *Bauddha* monument is not incompatible with Colonel WILFORD's notion that here stood the city of *Taxiles*, especially as we know the religion of *Buddha* flourished at an early age in *Cashmir*, and that the Hindus, in the days of the *Mahá Bhárat*, looked upon the people of the *Punjab* as little better than outcastes. The city could not have been *Bucephala*, as General VENTURA supposes—for ARRIAN states that ALEXANDER built that city on the bank of the *Hydaspes*, at the place where he crossed the river. The same authority informs us that the country between the *Indus* and *Hydaspes* was governed by TAXILES, who was reasonably apprehensive of the ambition of PORUS, the sovereign of the country on the east of the *Hydaspes*. But although *Manikyala* and *Takshasila* may have been the same place, the monument in question is, from the character of the Coins, subsequent to ALEXANDER and to the first Bactrian princes. It is also obvious that they are of different æras, and the monu-

* Whence the term Dagope—or *Deha*—the body; *Gopa*, what preserves.

ment is of course of more recent date than the most modern of the Coins. The subversion of the Bactrian kingdom brings us within little more than a century of Christianity; and about that time, and for one or two centuries after it, we know from Chinese accounts, as well as from the fathers of the Christian Church, that the *Buddhist* religion flourished, especially in *Bactria* and the north western provinces of *India*,—circumstances strongly corroborative of the supposed origin and history of the monument, leaving no doubt of its being a *Bauddha* structure, and rendering it probable that it was erected about the commencement of the Christian æra.

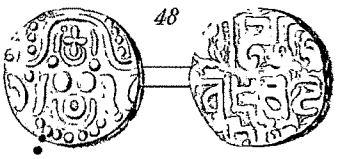
ANCIENT COINS.

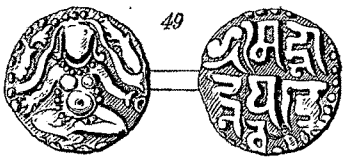
Copper.

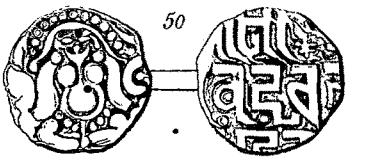
J. Prinsep del. Kasinath sculpsit.

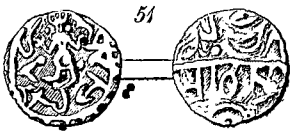
ANCIENT COINS.

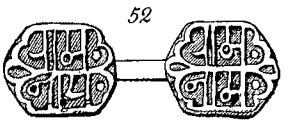
Gold.


48

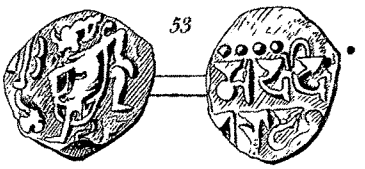

49

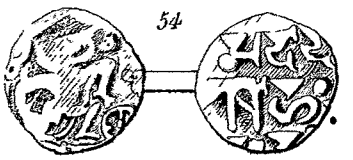

50

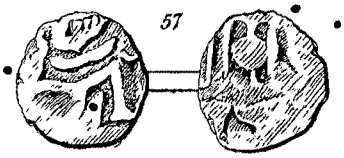

51

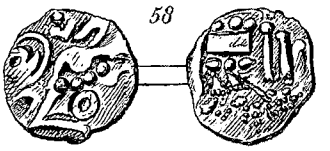

52

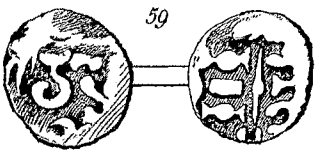
Silver.

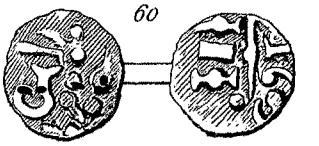

53

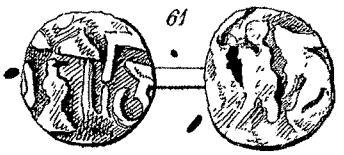

54

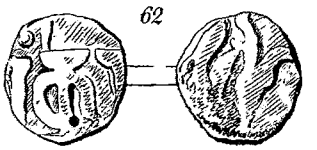

57

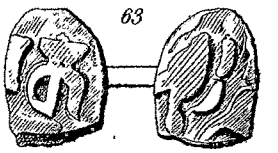

58

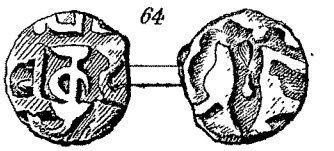

59

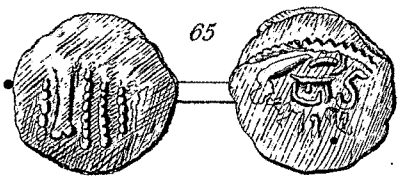

60


61

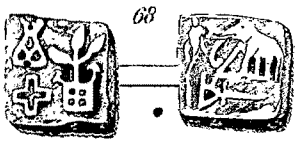

62

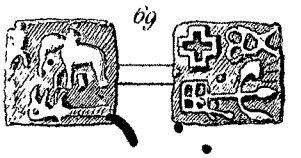

63

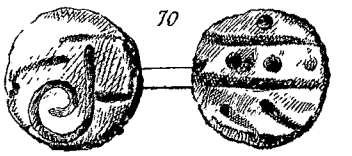

64

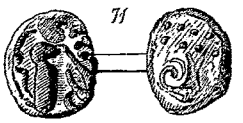

65

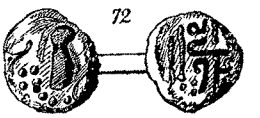
Copper.

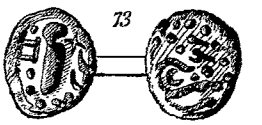

68


69


70

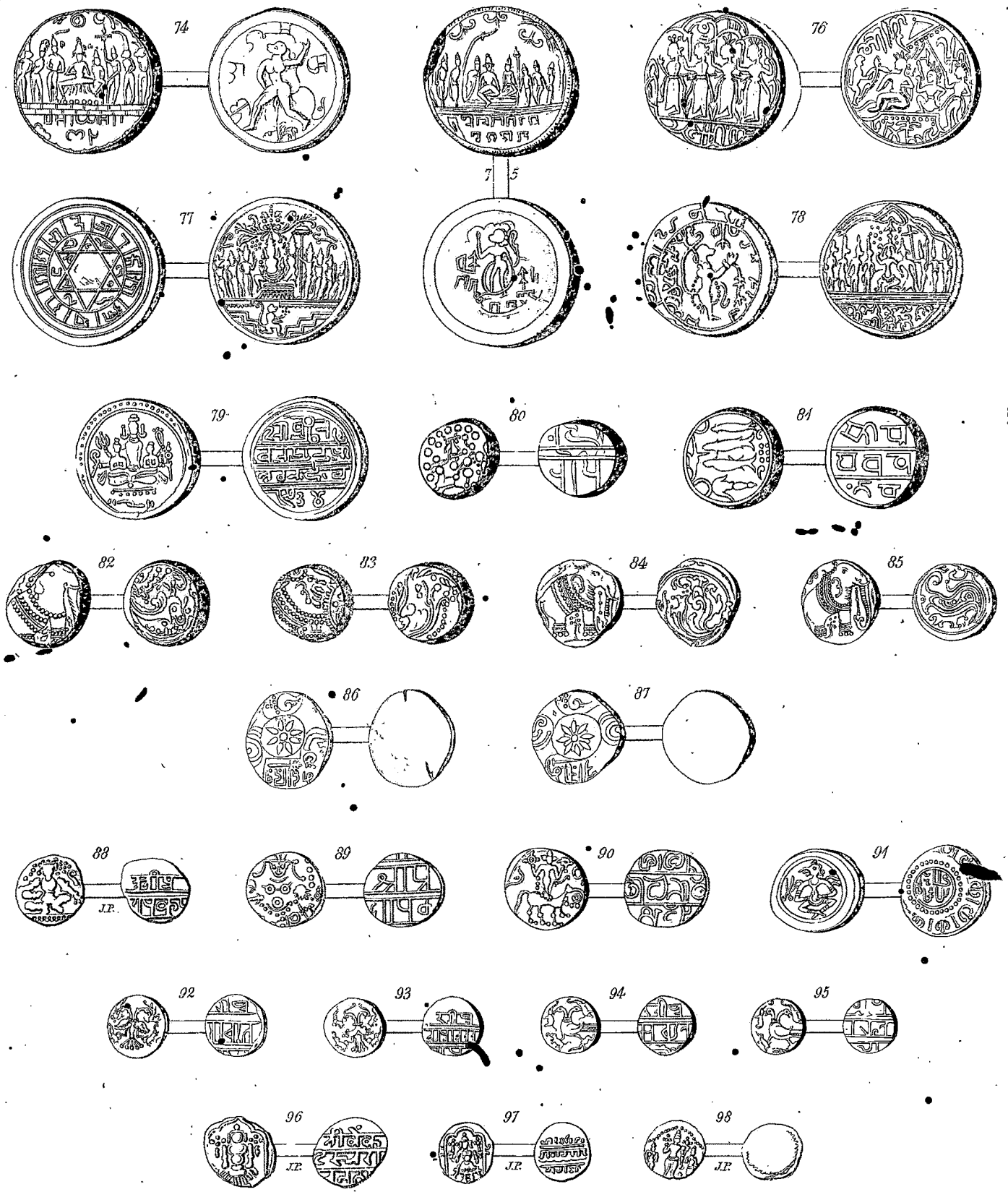

71


72


73

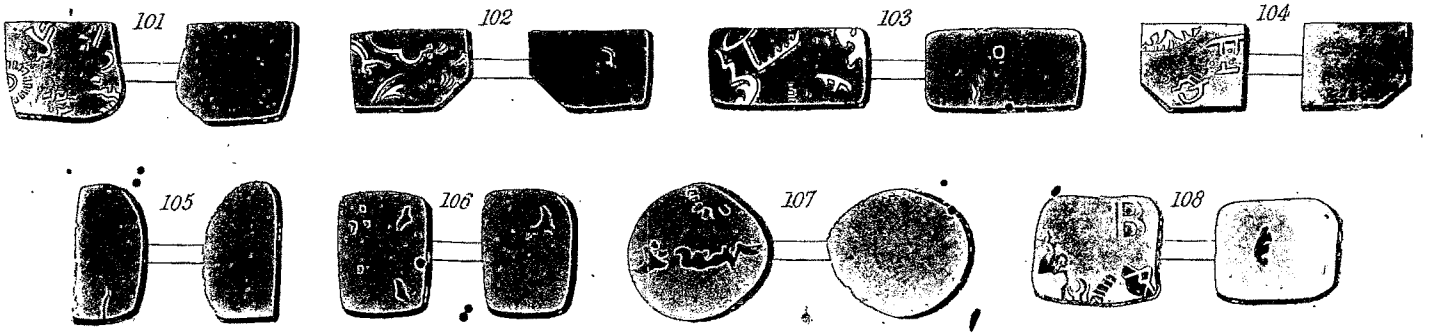
ANCIENT COINS.

Gold.



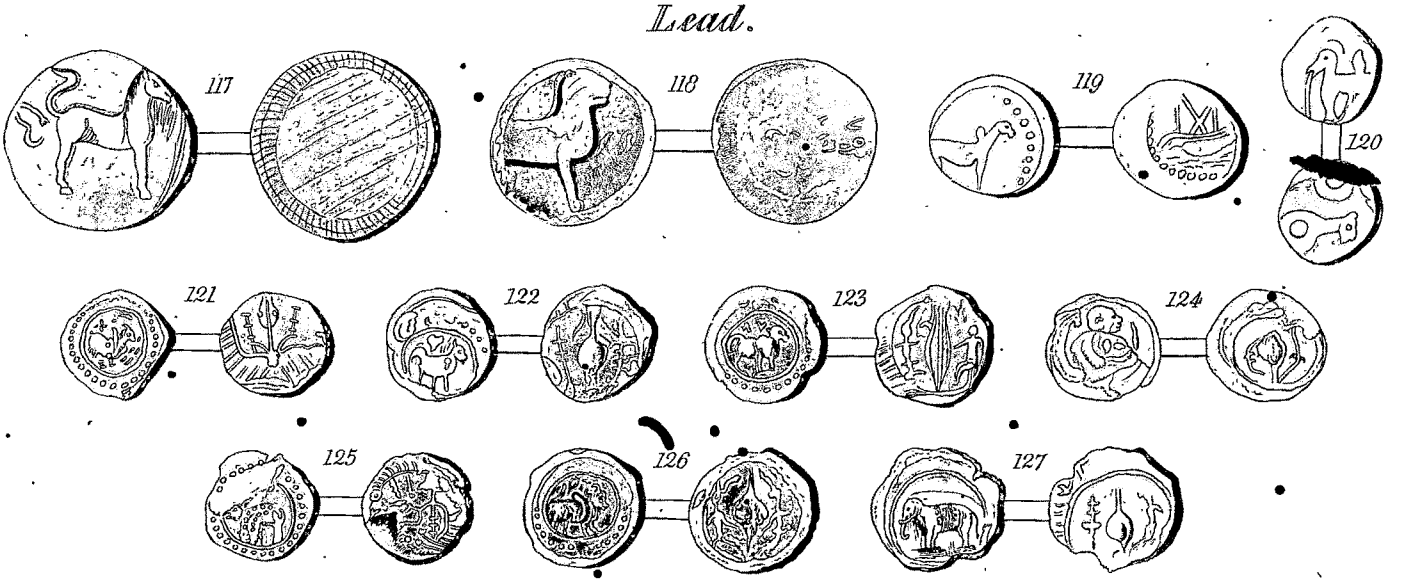
ANCIENT COINS.

Silver.



Copper.

Lead.



X.

REMARKS
ON THE PORTION OF
THE DIONYSIACS OF NONNUS
RELATING TO THE INDIANS.

By H. H. WILSON, Esq.
Secretary A. S.

In the Ninth volume (page 93) of the Researches, the late Colonel Wilford, quoting the *Dionysiacs* of Nonnus, asserts that they are really the history of the *Mahá Bhárata*, or Great War. A certain Dionysius, he continues, "wrote also a history of the *Mahábhárata* in Greek, which is lost; but from the few fragments remaining, it appears that it was nearly the same with that of Nonnus, and he entitled his work *Bassarica*." The *Dionysiacs*, he states, supply deficiencies in the *Mahábhárata* in Sanscrit, such as some emigrations from India, which it is highly probable took place in consequence of this bloody war.

Sir William Jones had a different notion of the *Dionysiacs*, although he also was disposed to draw a parallel between them and a Hindu Poem, the *Rámáyana*. He expresses himself confident that an accurate comparison of the two Poems would establish the identity of Dionysos and the elder Ráma.

Opinions coming from such quarters could not fail to carry due weight with them, and it has been generally admitted that analogies are traceable between the Poem of *Nonnus* and one or other of the Great Indian Epics. The precise nature of these analogies has not, however, yet been pointed out, and it is undetermined how far the Egyptian Poet derived his materials from an Indian source. The enquiry is of historical as well as of literary value. If a Sanscrit work really supplied the *Dionysiacs* with any part of their subject, we obtain an additional step in the chronology of the original, and the antiquity of the *Hindu* traditions which it preserves.

That any affinity between DIONYSOS and RÁMA is evinced by the *Dionysiacs* as compared with the *Rámáyana*, is an assertion which that comparison will scarcely justify. There is no resemblance between the heroes in name or attributes, nor the course of events, and the whole identity resolves itself into whatever likeness *Hanumán* and his apes may be thought to bear to *Pan* and his Satyrs. The opinion of SIR WILLIAM JONES rested, therefore, on more unsatisfactory grounds than he suspected. With the *Mahábhárat* there is, perhaps, a rather less questionable affinity, but we can scarcely admit with WILFORD that the work of NONNUS is the history of the Great War, or that it supplies any deficiencies in the Sanscrit composition. In order however, to set this in a clearer light, it may be convenient to advert briefly to the subjects of the *Rámáyana* and *Mahábhárat*, and to detail more at length such portions of the *Dionysiacs* as relate to events of which India is the site or theme.

The *Rámáyana* relates, as is well known, a leading event in the life of RÁMA, king of *Ayodhya*, or *Oude*. Having been banished by his father DASARATHA, he adopted the life of an ascetic in the forests at the sources of the *Godáveri*, accompanied by his brother LAKSHMANA and his wife SITÁ. The latter being stolen from him by RÁVANA, king of *Lanca*, RÁMA, with the assistance of SUGRIVA, king of the monkeys, or foresters and

mountaineers of *Karnáta*, invaded the capital of the ravisher, took it, killed RÂVANA in battle, established VIBHÍSHANA, that monarch's brother, on the throne, and returned to *Ayodhya*, of which, his father being dead, he assumed the sovereignty.

The *Mahábhárat* details the dissensions of the *Pándava* and *Kaurava* princes, who were cousins by birth, and rival competitors for the throne of *Hastinapur*. The latter were at first successful, and compelled the former to secrete themselves for a season, until they contracted an alliance with a powerful prince in the *Punjab*, when a part of the kingdom was transferred to them. Subsequently, this was lost by the *Pándavas* at dice, and they were again driven into exile, from which they emerged to assert their rights in arms. All the princes of India took part with one or other of the contending kinsmen, and a series of battles ensued at *Kurukshetra*, the modern *Tahnesar*, which ended in the destruction of DURYODHANA and the other *Kaurava* princes, and the elevation of YUDHISHTHIRA, the elder of the *Pándava* brothers, to the supreme sovereignty over India.

I shall now offer a sketch of that portion of the *Dionysiacs* which I have noticed above, premising, however, that I cannot pretend to have done more than cursorily inspected the work, in order to form a general idea of its details. SIR WILLIAM JONES acknowledges he never read more than half of it, and those to whom the composition is known will probably be disposed to admit that to have perused even so much was a proof of no ordinary patience and assiduity. The general character of the poem is so far Indian and *Pauranic*, that it is of extreme prolixity, and the course of the story is incessantly interrupted by mythological episodes more curious in general than instructive or interesting.

NONNUS was a native of *Panópolis*, in *Egypt*, and flourished at the end of the fourth or in the beginning of the fifth century. In mature years he

[illegible]

[illegible]

[illegible]

a cavern amongst the mountains of *Alybes*, on the river *Gendis*. BACCHUS teaches the mountaineers the cultivation of the grape and the manufacture of wine. It requires more ingenuity than I pretend to, to discover any thing decidedly Hindu in these occurrences.

ASTRAIS, the former commander of the Indians, applies to a Chief named ORONTES, for succour. ORONTES is the son of the River Deity *Hydaspes*, and father-in-law of DERIADES. He raises an army against BACCHUS, and by the course of the story it should appear that he is the aggressor, invading Asia Minor or Lydia. Being overthrown, he kills himself rather than submit, calling upon the sun and earth and holy water, "the God of the Indians," to witness his determination to reject the yoke of the effeminate BROMIUS:

> Οὐ πιθόμεν Βρομιῳ θηλυφρόνι μαρτυρας ἕλκων
> Ἥλιον και γᾶιαν ἀτέρμονα, κοα θεόν Ινδῶν
> Ἁγιὸν ὕδωρ.

This adjuration does bear an Indian character, and although the name ORONTES does not offer any very close approximation to a Sanscrit original, it may possibly be derived from ARINDAS or ARINDAMAS, "the subduer of enemies," an epithet sometimes applied to Hindu warriors and kings. At the same time, NONNUS is not the inventor of this story; for two centuries before his time PAUSANIAS states that it was a tradition in *Syria*, that an Indian warrior had fallen in battle on the banks of the *Orontes*, which was thence named after him. He also mentions that a skeleton, eleven cubits long, having been found near the river, the *Syrians* consulted the oracle of *Claros*, which replied that it was undoubtedly the skeleton of the Indian hero. NONNUS says that the Hamadryads interred ORONTES on the banks of the Daphne, and inscribed upon his tomb; "the General of the army, the Indian ORONTES, after defying BACCHUS, lies here killed by his own right hand."

> Βάκχον ἀμπησας στρατης προμος ειθαδε κειται
> Αὐτοπόνω παλάμῃ δεδαϊγμένος Ἰνδὸς Ὀροντης.

Part of the Indians found a refuge in Mount Taurus, whence they returned to India, but the curly-haired BLEMYS, king of the ruddy Indians, submitted to BACCHUS. He, it appeared, held DERIADES, his rule and manners in abhorrence: his own country was Arabia Felix, but he afterwards removed to Ægypt and Æthiopia, becoming king of the latter country, of which the people were called after him *Blemyes*. This is no more than the version which NONNUS chuses to give of the old and numerous traditions that identified the Indians and Ethiopians, as intimated by PHILOSTRATUS, who speaks of Ethiopian colonies of Indians, cultivating the wisdom of their ancestors, the wisest of mankind.—*Life of Apollonius, b.* 6. *ch.* 16.

BACCHUS, following up his advantage, marches towards India, and is met on his way by STAPHYLUS, king of the Assyrians, with his son BOTRYS, and on the visit of the Divinity to the palace of the Assyrian monarch, he, his son, his wife METHE, and an old man named PITHUS, are introduced to the taste of the juice of the grape, and become intoxicated. The males are finally metamorphosed into the articles their names imply, or *Staphyle* a grape, *Botrys* a bunch of grapes, and *Pethos* a barrel, whilst *Methé* signifies intoxication. The whole is therefore merely a diffuse pun, or series of puns, although the late Col. WILFORD was disposed to detect Sanscrit etymologies under these appellations, *Pita* or *Pitrí*—and *Mátá* or *Maï*, by which designations SIVA and BHAVÁNÍ are often worshipped, and are so particularly, according to him, on the banks of the Indus. *Staphyle* he would resolve into *Ashta phalam*, the eight-leaved Lotus, the type of the great universal mother. *Mata*, drunk, has possibly some relation to *Methé*.

We have in the eighteenth book a new origin for the Indians, who are descended from one of the sons of *Terra*, or Giants, named Indus, cast down from heaven by JUPITER in the Saturnian war.

especially commands the people of *Æthre*, the city of the sun, *Anthera* abounding in shrubs, in which WILFORD recognises Oude, and the reedy *Orytea*. Also *Nesaia*, *Melaine* and *Patalinne*, with a saline soil. The latter is readily identifiable with the Indo-Scythic town *Patalene*, at the mouth of the Indus. With these march the hairy-breasted *Dussœi* and *Sabiri*—the latter possibly the *Suviras* or *Subiras* of the *Puranas*. Also the men who sleep wrapped up in their own ears. These are commanded, apparently, under the Maharaja by BRINGUS—a Hindu name, either BHRIGUS or BHRINGAS—DANYKLOS, HIPPURUS and TECTAPHOR. The old story of the Grecian daughter is told of this Chief, and having been condemned by DERIADES to die of hunger in prison, his life was preserved by his daughter's milk, which circumstance becoming known to the king, he restored the prisoner to freedom. The *Bolingi* are under his command. The *Arachosians* march under GINGLON, THUREIS and HIPPALMOS. The *Derses*, armed with bows, are commanded by HABRATHOUS, an unwilling auxiliary, labouring under the disgrace of having had his head shaved by order of DERIADES—a mark of infamy, it is said, amongst the Indians, Ἰνδοῖς πικρὸν ὄνειδος—and this is no doubt an old sentiment, for it is said of SAGARA that when he had subdued various outcaste tribes, he was induced by the intercession of the Sage VASISHTHA to spare their lives, contenting himself with enforcing the practice of keeping the head shaved either wholly or in part. We have then the *Xuthi*, *Arieni*, *Za-ori*, *I-öri*, *Kaspeiri*, whom we know to be *Kashmirians*—the *Arbiæ*, the people of *Hysperos*—the people of *Arsania*, a city of the south, famous for its cotton manufactures—the *Kirrhœi*, a people of the islands, navigating in skins—the people of *Aryzantea*, where there are trees shedding honey; the trees are haunted not only by birds and bees, but dragons and serpents, and the story may be borrowed from the Hindu notions of the *Sandal* tree, the growth of the Malaya mountains, or Southern Ghats, the favourite haunts of snakes. There also are birds that sing with human voices, and others that predict future events—varieties of the feathered species frequent

in Hindu fiction. Next come the *Sibæ, the Sívas* of Pauranic geography, the people of *Hydarké* and *Karmina*, and those inhabiting the mouth of the Indus and islands in its vicinity, under RIGBASUS and ARETUS, with his five sons LYKUS, MYSSUS, GLAUKOS, PERIPHRAS and MELANES. We have then the inhabitants of the *Pyke* or passes, perhaps the Ghats; of the Eastern *Eucolla*, which Major WILFORD recognises in *Utkala* or *Urissa*, and of the fertile *Goryandis*, *Gaura-dés* or *Bengal*, and *O-etha*, furnishing superior elephants, which the same authority conjectures to be *Ayodhya* or *Oude*. The armament is completed by the people of *Eristobareia*, the *Derbici*, the *Ethiopians*, *Sakai*, *Bactrian* and woolly-headed *Blemys*. All these obey DERIADES, who is the son of the HYDASPES by the Nymph ASTRIS, a daughter of the SUN by CETO the *Naiad*. The Hindu legend makes DURYODHAN, not the son exactly but the descendant of the SUN through his daughter TAPATÍ the *Naiad*, or Goddess from whom the *Tapti* river derives its name.

In the twenty-eighth book, a battle takes place between the forces of BACCHUS and DERIADES: the Indians are described as armed with swords and shields, bows and arrows, their Chiefs wearing mail, and mounted on chariots, or riding on elephants: some of them use swords twenty cubits long, an exaggerated description of the two-handed sword which may sometimes be seen in India. The *Cyclopean* followers of BACCHUS fight with brands and bolts of fire: the chief hero of the Indian army is termed KORYMBASOS, but he is at last killed, and the Indians are repulsed: they rally again; and the battle is resumed in the twenty-ninth book, until night separates the combatants.

In the thirtieth book, MORRHEUS falls upon the *Satyrs*, and wounds EURYMEDON, the son of VULCAN, who comes to his succour and involves the victor in a flame of fire. HYDASPES comes to *his* aid and extinguishes the flame. This is undoubtedly Indian, and both in the *Mahábhárat* and

[illegible] we have repeated [illegible] of the counteractin[illegible] [illegible] employed [illegible] by the chief heroes. [illegible] of [illegible] have now the [illegible] and BACCHUS himself flies [illegible] He is stopped [illegible] and encouraged to return to the field [illegible] the action [illegible].

The greater part [illegible] compared with a prolix [illegible] of HOMER's [illegible] attention [illegible] the friend of [illegible] [illegible] embraces, the furies by [illegible] direction, [illegible] is his own tree [illegible] but [illegible] disguised [illegible] [illegible] comes [illegible] of [illegible] and direct [illegible] The [illegible] of [illegible] taken and [illegible] pretence of [illegible] dragon, [illegible] says [illegible] here [illegible] *[illegible]* [illegible] [illegible] by the Gods [illegible] separated by MERCURY. [illegible] [illegible] is obliged [illegible] [illegible] prepares for [illegible] vanquish the Indians by [illegible] orders [illegible] *[illegible]* [illegible] Indians are nothing dismayed [illegible] [illegible] encourages them by

observing that the Indians are accustomed to naval warfare, and are more formidable at sea than on shore.

> Ἰνδοὶ γὰρ ἐθήμονες ἐστὶ καὶ ὁμοῦ
> Εἰναλίοις, καὶ μᾶλλον ἀρίστευσι θαλάσσῃ
> Ἢ χθονὶ δηρίοντες.

These matters carry on the poem to the end of the thirty-sixth book.

Nothing to our purpose occurs in the two next books, of which one is occupied with the funeral games solemnized by BACCHUS, the other in the true style of the *Paranas* by a system of Astronomy. A few lines at the beginning of the thirty-seventh book correctly express Hindu sentiments. The Indians, says MORNUS, burn to their dead with tearless eyes, considering that the deceased had escaped the bonds of life, and the spirit had returned in its circular revolution to the goat from whence it first set on.

In the thirty-ninth and fortieth books, the *Chadamaines* or *Arabs* enter the *Hydaspes* with their fleet, not bearing mention by the *Bacchants*. As encountered under the walls of *Deris* by the Indian flotilla commanded by DERIADES and MORRHEUS. A sanguinary conflict ensues—MORRHEUS is wounded, and retires into the town. DERIADES, after retreating to the bank, is also wounded by BACCHUS, and falls into the *Hydaspes*, by which the war is terminated, and BACCHUS triumphs. It does not appear that his sovereignty is permanently established, for the poor conquers him back to Asia Minor, and we have no further notice of India.

From this sketch of the Indian portion of the *Dionysiaca*, it must be clear that they have nothing in common with the *Ramayana*, and little more with the *Mahábhárat*. They no doubt offer some analogies in the names of persons and places, and it is not impossible that their author may have picked up some hints in addition to those afforded by ARRIAN,

STRABO, and other writers on India. This is capable of easy explanation. There can be no doubt that an active intercourse subsisted between India and Egypt in the early ages of Christianity, by way of the Red Sea, carried on by both Arab and Indian vessels. The ancient fictions, and it may be added laws of the Hindus, and the vestiges of their race, language, and religion found in distant countries, particularly in the Eastern archipelago, prove that there was a time when they were enterprising navigators, and that they were, as NONNUS asserts, accustomed to naval tactics. That they should visit Egypt—that some of them, probably many, were to be found at Alexandria and other cities of that country, is therefore nothing unaccountable, and from them NONNUS, himself an Egyptian, might easily have collected much more valuable accessions to his long and elaborate composition than those which it actually affords. The few analogies that it does present, may be received in evidence of the existence of the story of the *Mahábhárat* as early as the fifth century of our era, but throws no further light upon the history of ancient India, and gives no additional weight or consistency to the Grecian fables of the conquests or origin of BACCHUS.

END.

APPENDIX.

List of the Donors and Presents made to the Asiatic Society's Museum from April 1823 to September 1832.

AINSLIE, W. ESQ.—2 Bottles containing extract of the Upas and a Croose.

ANDERSON, LIEUTENANT.—A Quiver, Arrows, Sword, a Matchlock and a Suit of Mail.

AYDELL, J. ESQ.—Fragment of a Brick from the ruins of Babylon. Fourteen Antique Roman Coins.

BAYLEY, W. B. ESQ.—2 Specimens of the large Bamboo from the Island of Pulo goon, and various Specimens of Ore of Antimony from Martaban. Two Mother of Pearl Oyster Shells from Mergui. The Skull, Horns, and Hide of the Wild Cow of Tenasserim.

BEATSON, MAJOR W. S.—Two Slabs of Sandstone from Gwalior.

BEGUM SOMEROO, HER HIGHNESS.—Silver and Brass Coins struck in the reign of Feroz Shah and Mohummud Shah.

BROWN, ROBERT, ESQ.—A Copper-plate found at Jhoory with Facsimile of Sanscrit Inscriptions.

BURLINI, L. ESQ.—A Dried Head of a South Sea Islander, the Bladder of a Tiger, Jaw of a Shark, a Sword Fish, a Collection of Shells, and a Dried Fish.

CATHCART, J. F. ESQ.—Specimen of a Cape Fish called there "Sea-horse Fish," also a pair of Cape Pheasants.

CAUTLEY, LIEUTENANT P. T.—Seven Silver Coins found in digging a Canal in the Doab.

CRAWFORD, CAPTAIN J.—Impression and Drawing of a Coin, with Cufic Characters, found at Baitool.

DAVIS, W. ESQ.—A Skin of a large Snake Boa Constrictor measuring 22ft. found in the Sunderbuns.

DILLON, CAPT. P. Commander of H. C. Ship *Research*, on his Voyage in search of La Perouse. Some Spears from the Feejee and Friendly Islands. Two Spears from New Zealand. One Spear set with Shark's teeth from Simpson's Island. One Bow from Mannicolo. One bunch of Poisoned Arrows pointed with human bone. One bunch ditto, with wooden point. One Mannicolo Club. Some Clubs from the Friendly and Feejee Islands. One Club from the Island of Rathama. One ditto from Indenny or Santa Cruz Island. One Club from New Zealand. Some Feejee and Friendly Island Pillows. Two Mangeer Fans. One Porcupine Fish Cap from Simpson's Island. Three Cava or Grog Dishes from the Friendly Islands. Specimens of Cloth from the Mannicolo Islands apparently woven. One New Zealand Nobleman's Cloak or Great Coat. Four bundles of Cloth manufactured from the Mulberry Tree of the Friendly Islands. One War Cloak and Mask of Mannicolo. One large Stone Axe of Mangeer. Some spotted Cowrie Shells. Some white ditto. Sixteen different kinds of Cowrie Shells. One deep Sea Shell. Three dozen long Ditto. One Neck Ornament of Mannicolo. Thirty-six Cong or Spider Shells. Three dozen ditto. Six Cong Shells. One earthen Jar manufactured by the Natives of the Feejee Islands.

GARROW, D. REVEREND.—A Wheel of *Jagganath's Ratha*, or Car, from Cuttack. A specimen of China Grass from ditto. Also a specimen of Country Cochineal.

GEORGE, J. MR.—A Snake called Kala Ganny.

GERARD, CAPTAIN A.—A specimen of the Stone used for Lithographic Printing in Tibet. Fossil Remains from Himalaya. A Collection of Fossils.

GERARD AND ROYLE, MESSIEURS.—Specimens of Minerals from the Upper Provinces.

GOODHALL, H. ESQ.—Drawings of a Fossil Shell.

THE GOVERNMENT OF BENGAL.—Articles of Tibetan manufacture; viz. No. 1. A Pair of Mongol Boost. 2. Ditto of Shoes. 3. A Silk Purse. 4. Ditto. 5. A Watch Case. 6. Cover for Snuff Box. 7. Pillow Cover. 8. Belt for knife. 9. Silk Bags. 10. A Pair of Eye Covers. 11. Ditto Ear Ditto. 12. Lanthorn in Tin Case. 13. Ditto in Red Box. 14. A Wooden Cup. 15. Knife and Sticks. 16. Ditto. 17. Inkstand Case. 18. A Fan. 19. Ditto in a Case. 20. A Brush with Napkin. 21. Eight China Drawings. 22. Spectacles. 23. Ditto.

GREY, HONOURABLE CHARLES EDWARD.—Two Cabinets of Mineral Specimens of Rocks from Penang.

HAYES, SIR J. COMMODORE.—A Conglomerate of Silicious Sand, Mica, Alumine and Peroxyde of Iron, from the Arracan Coast.

HERBERT, CAPTAIN J. D.—Horns of Various kinds of Deer.

HEWETT, CAPTAIN.—The Head of a Woodcock killed near Kurrah in the Doab.

HODGSON, H. B. ESQ.—Specimens of Gold of Bhote and of a Medicinal Root from Nepal.

KALIKISSEN, KARAMCOOR MOHA BANK.—Models of Cutlinary Vessels and Pooja Vessels of the Hindus. Model of a Bottle.

MACKENZIE, CAPTAIN J.—Mineral Specimens and some small Figures of Buddha.

MARTIN, J. K. ESQ.—The skin of an Emu. The nest and feathers of the Manula Superba and a piece of Net of Native fabric. A Cast of the face of a Native of New Holland, and a specimen of Gum of the Acacia Mimosa of that Country. A Pig, with two heads, and the young Kangaroos in spirits.

MATHOORENATH PUTTUCK, BABOO.—A Malay Kreese.

MITCHELL, CAPTAIN.—A poisonous Insect, called Fish Copra, in spirits.

MOLTON, ——, ESQ.—The Leaf and Fruit of the Cocoa de Mer.

PARKER, CAPTAIN.—Two Pearl Oyster Shells from Valparaiso.

ELLIOT, J. HOBART.—A stuffed Civet Cat.

PRINSEP, JAMES ESQ.—A brass Equestrian Figure, said to be that of Rajah Salya, found at Silwan, in the Futtehpur District.

RADHACANT DEB, BABOO.—A young Pigeon, with two heads.

RAMCOMUL SEN, BABOO.—Models of the Instruments used in the Charuk, viz. 1. Vetrasana. 2. Pátor Bag. 3. Sutrasana. 4. Rattan Fitta. 5. Bamboo Rito. 6. Logline. 7. Dasanakni. 8. Bati. 9. Bhurá. 10. Visesaya. 11. Three Bás and Kapáli. 12. Charak Cánta or hooks. 13. Belcár or lancets. 14. Charak Gach or Swinging Post. 15. Some Belcars or lancets. 16. Two Nágapás. The Coat, Cap, Cup, and Staff of Byrágees. Musical Instruments used by the Hindus, viz. 1. Dhák Drum.

2. Dhola. 3. Dholáka. 4. Jarágháyi. 5. Tásá. 6. Dágará. 7. Kádá. 8. Rám-a-Kádá. 9. Dhámshá. 10. A small Drum. 11. Tikárás. 12. Jayádhák. 13. Mridanga. 14. Mádála. 15. Pákwáz. 16. A pair of Tablá. 17. Dampa. 18. Dárá. 19. Two Khanjaris. 20. Damroo. 21. Doobdoobi. 22. Been-setárá. 23. Setárá. 24. Serang. 25. Sárindá. 26. Bárk. 27. Bhorung. 28. Bheree. 29. Bansies. 30. Two Sánáyis. 31. A pair of Karátala. 32. Jhanj. 33. A pair of Mandirá. 34. One Kánsara. 35. Ghántá or bell. 36. Sankha or blowing Conch Shell. 37. Nripura. 38. Ghungura. 39. Mochung or Harp. 40. Tooree. 41. Kánsi. The Banner of Madari. A Dried Fish.

SANDERS, CAPTAIN, AND MR. E. V. IRVIN.—An Ancient Coin.

PRINSEP, H. T. ESQ.—FROM THE GOVERNMENT OF BOMBAY.—Two Gold Coins, one of Toghlek Shah and the other of Mohummud Shah, found in the Konkan.

THOMASON, J. ESQ.—18 Coins found at Khurrah, in the District of Futtehpoor by A. F. LIND, ESQ. Judge of that district.

SHAKESPEAR, C. ESQ.—Six Models of Rustic Cane and Suspension Bridges

SIVACHUNDRA DOSS, BABOO.—A Gorakh Jhanda—an Iron rod set in a Number of rings, and used by a particular Hindu sect.

STRONG, F. P. ESQ.—A Flying Fish in spirits.

SWINTON, G. ESQ.—The Vertebra and Cranium of a Whale.

TWEMLOW, CAPTAIN.—2 Copper Coins, one of Toglek Shah, found at Ellora.

TURNER, R. ESQ.—Specimens of Fossils from England collected in the vicinity of Whitby in the Yorkshire coast.

VANZETTI, CAPTAIN.—A Statue of Devi, from Kemaon.

WALTERS, H. ESQ.—One Kampti Hat. A Spear and Sword. A Tibet Sword. A stuffed Nepal Pheasant. A Kitten with a double body. A Copper plate with fac-simile inscriptions found in the district of Dacca.

WILLIAMS, T. ESQ.—13 Copper Weapons found in the earth near Futtehgerh.

WILSON, H. H. ESQ.—Musical Instruments; viz. 1. Tánpurá. 2. Ektárá. 3. Gajee 4. Khartala.

List of the Donors and Donations made to the Asiatic Society's Library, from April 1828 to September 1832.

ABDOOL MAJID MAULAVI.—A Copy of the Koran, with interlinear versions in Hindustani.

ABDOOR RAHEM MAULAVI.—Copy of an Arabic Grammar.

ACADEMY ROYAL OF PRUSSIA.—Questions for Prize Essays for 1832.

ASHBACK, —ESQ.—History of the Ommiades in Spain.

AVDALL, J. ESQ.—Porteus' Evidence of Christianity translated into Armenian. The Prayer of Nierses Clajensis in 24 languages. Abridgment of Chamich's Armenian Grammar. Translation of Paul and Virginia into Armenian. Lament on the Capture and Destruction of Edessa, an Armenian Poem, written in the middle of the 12th Century, by Nierses Shenorhali, in Armenian.

BALBI, MONSR.—A Sheet showing the Balance Politique du Monde.

BLACK, THOMAS, MR.—A Copy of Nal Duman, in Persian.

BLANT, LIEUT. A.—Dictionary of the Tamul and French Languages.

BOARD, MEDICAL, OF MADRAS.—Reports of the prevailing diseases of European Troops serving under that Presidency.

BOULDERSON,—ESQ.—Copy of an Inscription found in a Temple near Allahabad.

BOWDITCH, DR.—1st and 2d Vols. of the Translation of the Mecanique Celeste.

BRETON, P. DR.—A Vocabulary of Anatomical terms. Copies of his Lectures in Oriental Languages.

BURLINI, L. ESQ.—A Copy of the 3d Vol. of the Asiatic Researches, and that of Cambry Monumens Celtiques.

BURNES, A. CAPTAIN.—A Map of the Eastern branch of the Indus.

BURNOUF, MONSR.—Vendidad Sade text, first Fascicle, Manava Dharma Sastra Sanscrit, 2 Vols. Meng Tseu, in Chinese, with translation by Monsr. Julien. Eloge Sur la Prise d' Edesse (Turkish). Essai on Pali, by the Donor and Monsr. Lassen. Georgian Grammar and Vocabulary, by Monsr. Klaproth. Elements of Japanese Grammar.

CHEZY, MONSR.—Yajnadatta Badha, text and translation, and Theorie du Sloka.

CHITTY, SIMON CASIE.—Copy of a description of the Tamul Castes.

COLLEGE OF FORT WILLIAM.—The Kah gyur, and other Tibetan MSS.

COMMITTEE, GENERAL, OF PUBLIC INSTRUCTION.—Bhatti Kavya, 2 vols. Laghu Kaumudi. Mugdabodha. Rajniti. Bhasha Parichcheda. Lilavati. Miscellaneous Tracts in Persian. Moolukhhusool Tuwareekh. Fatawa Alemgiri, in Arabic. Moojizool Qanoon. Mejmua Shemsi. Inayah. Æsop's Fables, Nyaya Sutra Vritti. Vedanta Sara. Sahitya Darpana. Menu Sanhita. Mrichchakati. Vicramorvasi. Malati Madhava. Uttara Rama Charitra. Mitakashara. Daya Bhaga.

COMTE DE NOE, MONSR.—Memoires de l'Expedition Anglaise de l'Inde en Egypt.

DE SACY, SYLVESTRE, BARON.—Grammaire Arabe Nouvelle Edition.—A Copy of Chrestomathie Arabe, 3 vols. and Nouveaux Aperçus Sur l'Histoire de l'Ecriture. Memoire Sur le Traité entre Phillipe le Hardi et le roi de Turins. Observations sur une Pratique Superstitieuse des Druses.

DE TASSY, GARCIN, MONSR.—Doctrine et devoirs de la religion Musulmane. Conseils aux Mauvais Poetes. Relation de la prise de Constantinople.—Memoire sur les Mussulmanes de l'Inde.

FRANKLIN, COLONEL.—A Copy of Researches on the Tenets and Doctrines of the Jains and Buddhists.

FISHER, ESQ.—The Ass overladen.

GAULIANOF, CHEVALIER DE.—Copy of Essai Sur les Hieroglyphes d'Horopollion.

GOODHALL, H. ESQ.—Drawing of a Fossil.

GRANT, J. ESQ.—A Copy of an Inscription from the walls of an old Temple at Nhiatrang, in Cochin China.

GREY, HON'BLE SIR CHARLES EDWARD.—Lexicon Græco Latinum Constantine. Platonis Opera Omnia, 3 vols. Aristotelis Opera Omnia, 11 vols. 4to. in 6. Ciceronis

Opera Omnia, 10 vols. The Works of Dugald Stewart, 5 vols. Histoire de la Philosophie Moderne, 6 vols.

HAMMER VON, COUNCELLOR.—2d, 4th, 5th, 6th, 7th and 8th vols. of his History of the Ottoman Empire. Letters on the Library at Turin. Observations on the Byzantine Historians. Jahrbucher der Literatur Nos. 45 to 52. Siege of Vienna, by the Turks. Meditations of Marcus Antoninus translated into Persian. Origines Russes? Reponse a Tutundjou Aglow, and several Tracts

HODGSON, H. B. ESQ.—A Copy of the work of Bibasius on Surgery, found in Nepal.

HOLMES, REV. MR.—First part of Sanscrit renderings of Scriptural terms.

HOWELL AND STEWART, MESSRS.—Supplement to Oriental Catalogue.

JACQUET, MONSR.—Considerations Sur les Alphabetes des Philippines.

JAMESON, PROFESSOR.—The first Eight and 19th, and 20th Nos. of the Edinburgh Philosophical Journal.

KALIKISSEN, MAHA RAJA.—A Copy of his Translation of Poorooshpareeksha, and Moral Sentences and Nitisankulun.

KASSIPERSAUD GHOSE, BABOO.—The Shair and other Poems.

KENNEDY, DR.—Visconti, a Tragedy.

KLAPROTH, MONSR.—A Memoir on the sources of the Irawadi and Brahmaputra. Etude Comparative des langues. Fragmens Boudhiques, and Description du Tibet, and several Pamphlets.

LASSEN, PROFESSOR.—Pentopotamia Indica. A new edition of Hitopadesa.

LAUTERBACK.—ESQ.—Exposure of a fictitious translation of Confucius, by Schotts.

LOW, JAMES CAPTAIN.—A Copy of the Siamese Grammar.

LUKSHMINARAIN PUNDITT.—A Copy of the Mahabharut, in Hindee, 4 vols.

LYCEUM OF NATURAL HISTORY OF NEW YORK.—2d vol. and 1st and 2d Nos. of the 3d vol. of their Annals.

MACAN, T. CAPTAIN.—A Copy of the printed edition of the Shahnamah, 4 vols.

MACUCLLOCK, MR.—His Researches into the history of the Aborigines of America.

MACNAGHTEN, W. H. ESQ.—On the Principles and Precedents of Hindu Law.

MADRAS, GOVERNMENT OF:—Astronomical Observations, Madras Observatory, vol 5.

MAKOWSKI, COUNT.—Copy of a Grammar of Sanscrit in the Polish language.

MARCOZ, MR.—Astronomie Solaire d'Hipparque.

MARCEL, MONSR.—Essai sur les Hieroglyphes. Ditto Keropollion.

MOREAU, CESAR, MONSR.—General view of the Financial state of the British possessions in India, British and Irish produce, and manufactures. Past and present state of British Navy. State of the trade of Great Britain. East India Company's Records. Chronological Records of British Navy. Examen statistique du Royaume de France.

NORTON, MR.—History of London.

OGLE, DUNCAN AND CO.—Cafalogue of their Library.

OTTMARFRANK, PROFESSOR.—The 3d vol. of Vyasa.

PATERSON, J. DR.—A copy of Sacred Lemmas.

PEGGS, JAMES, REV.—India's cries to British humanity.

RAFN, PROFESSOR.—The 3d vol. of the Scripo Historica Islandorum. The Krakumal, a Poem, and various Tracts.

RAMCOMUL SEN, BABOO.— A copy of the 1st vol. of his English and Bengalee Dictionary.

RAMDHAN SEN, BABOO.—A copy of the 3rd and 4th vols. of the Inayah, and his English and Persion Dictionary.

READBOLD, ENSIGN.—Two Persian Fal namas.

ROBERTSON, W. S. ESQ.— A copy of his Translation of Roostum and Sohrab.

SCHLEGEL, PROFESSOR.—The 1st vol. of the Ramayana and No. 4 of the 5th vol. of the Indische Bibliothec.

——————— AND LASSEN, A copy of the Hitopadesa. Commentary on Ditto.

SIVACHANDRA DOSS, BABOO.—A copy of the Hanoomand Charita MSS. and a Map of the World according to the Geography of the Puranus.

SOCIETY, AGRICULTURAL AND HORTICULTURAL, OF CALCUTTA.—1st vol. of their Transactions.

———, DITTO DITTO of ENGLAND.—The first 3 parts of the 7th vol. of their Transactions, with a list of Members and Reports.

———, D'AGRICULTURE ET DE COMMERCE DE CAEN.—2nd and 3rd vols. of their Transactions, and several Pamphlets.

———, AMERICAN PHILOSOPHICAL.—3rd vol. of their Transactions, in 3 parts. Elliott's Botany, 2 vols. and Tracts.

———, ANTIQUARIAN OF ENGLAND.—22nd and 23rd vols. of their Transactions.

———, ASIATIC OF PARIS.—Journal Asiatique, for June 1829, and January to March 1832.

———, ROYAL DITTO OF ENGLAND.—2d and 3d parts of the 1st vol. of their Transactions.

———, ASTRONOMICAL OF DITTO.—2d part of the 3d vol. of the new Series of their Transactions.

———, BATAVIAN.—8th and 12th vols. of their Transactions.

———, BOURDEAUX, ROYAL.—2 vols. of their Transactions.

———, EDINBURGH.—1st part of the 11th vol. of their Transactions.

———, GEOGRAPHIE DE PARIS.—2d vol. of Recueil des Voyages, with a list of its Members, and copies of their Proceedings, Nos. 22 and 23.

———, GEOLOGICAL OF ENGLAND.—2d part of the 2d vol. and 1st part of the 3d vol. of the new Series of their Transactions, with a list of Members, &c.

———, LINNEAN OF DITTO.—The 2d part of the 16th vol. of their Transactions, with a list of Members, &c.

———, MEDICAL AND PHYSICAL OF CALCUTTA.—4th and 5th vols. of their Transactions.

———, MEDICO-BOTANICAL OF LONDON.—Copy of an Oration delivered before that Society, &c.

———, OF ARTS, &c.—45th, 46th, and 47th, and 1st part of the 48th vol. of their Transactions, with a list of Members, &c.

———, PLYMOUTH.—1st vol. of their Transactions.

SOCIETY, ROYAL OF ENGLAND.—1st and 2nd parts for 1828, 3rd part for 1829, and 1st and 2nd parts for 1830, of their Transactions.

———, YORKSHIRE PHILOSOPHICAL.—Annual Report of their Proceedings and list of their Members.

STRONG, F. P. ESQ.—A copy of Dugdale's History of Embanking and Draining.

SULLY, D.—A Treatise on Hydrophobia.

TRAIL, D.—Report of the Proceedings of the 1st General Meeting of the Subscribers of the Oriental Translation Fund.

TRUSTEES OF THE BRITISH MUSEUM.—Catalogue of the Maps, and Plans in the collection of His late Majesty. Annual list of Donations and Bequeses to the British Museum. Catalogue of the Library of H. M. GEORGE IV.

TWINING, W. ESQ.—A copy of his Work on the Diseases of Bengal.

TYTLER, J. ESQ.—A Treatise on the Heart, translated into Arabic.

VAUGHAN, J. ESQ.—Relhan Flora Cantabrigienses. Lucien's Observations on the nomenclature of Wilson's Ornithology Letters on Commerce and Navigation of the United States, and Dan's Outlines of Mineralogy and Geology.

VIDUA, COUNT.—A Tagala Dictionary.

WILSON, H. H. ESQ.—McKenzie Collection, 2 vols. The Mrichakati, in the original Sanscrit. On the External Commerce of Bengal. Harris's Collection of Voyages. Histoire Generale des Voyages. Tagala Dictionary. Picart's Religious Ceremonies of all Nations. Historia Antipodum. Agricola de Re Metallica. Assemanni Bibliotheca Naniana. Vaillants Numismata Imperatorum. D'Olivet Langue Hebraique. Forster's Indian Zoology. Stewart's Bengal Coins. Sanscrit and English Dictionary, MSS. Medailles de l'Egypte.

WOOD, H. ESQ.—A Map of the Country, 40 miles round Calcutta. Map of Hindoostan, in Persian characters. Book of Roads in India. Resources of India. A copy of Goolistan and Bostan, and Alif Luela, all Lithographic Publications.

WOOD, G. ESQ.—Zoography, published by M. Wood, Esq.

MEMBERS OF THE ASIATIC SOCIETY.

1832.

Patrons.

THE RIGHT HONORABLE LORD WILLIAM CAVENDISH BENTINCK, G. C. B. and G. C. H., *Governor General, &c. &c.*

HIS EXCELLENCY GENERAL SIR EDWARD BARNES, G. C. B. *Commander in Chief.*

THE HONORABLE SIR C. T. METCALFE, BART., *Vice President.*

THE HONORABLE WILLIAM BLUNT, ESQ.

Members of the Supreme Council.

PRESIDENT.—THE HONORABLE SIR EDWARD RYAN.

VICE-PRESIDENTS.—THE HONORABLE SIR J. FRANKS.
HONORABLE SIR C. T. METCALFE, BART.
JAMES CALDER, ESQ.

Committee of Papers.

THE PRESIDENT, VICE-PRESIDENTS, SECRETARY, AND MEMBERS;—VIZ.

REV. DR. W. CAREY.	JAMES PRINSEP, ESQ.
MAJOR G. EVEREST.	J. THOMASON, ESQ.
G. J. GORDON, ESQ.	CAPTAIN A. TROYER.
REV. PRINCIPAL DR. W. H. MILL.	J. TYTLER, ESQ.

AGENT IN EUROPE.—
SECRETARY.—HORACE HAYMAN WILSON, ESQ.
LIBRARIAN AND SUPERINTENDANT OF THE MUSEUM.—DR. LOUIS BURLINI.
ASSISTANT LIBRARIAN.—HERAMBANATH THAKOOR.
TREASURERS.—MESSRS. MACKINTOSH & CO.
COLLECTOR.—BABOO RAMCOMUL SEN.
BOOKSELLERS IN ENGLAND.—MESSRS. PARBURY, ALLAN & CO.
DITTO FOR THE CONTINENT.—MESSRS. DONDEY, DUPRE & CO.

Physical Class.

PRESIDENT.—THE HONORABLE SIR E. RYAN.
VICE-PRESIDENT.—JAMES CALDER, ESQ.
SECRETARY.—JAMES PRINSEP, ESQ.

All Resident Members of the Society are Members of the Committee.

Members.

A

Achmuty, J.
Ainslie, M.
Anbury, Col. Sir Thomas
Ashburner, J.
Atkinson, J.
Avdall, J.

B

Bagshaw, R. J.
Baillie, Colonel John
Baillie, N. B. E.
Balfour, Francis, M. D.
Bayley, Hon'ble W. B.
Benson, Major R.
Berry, Andrew, M. D.
Biddulph, Robert
Bird, W. W.
Brightman, E.
Brooke, Thomas
Bryant, Lieut.-Col. Sir Jeremiah
Buckley, Captain W.
Bulter, Sir Antony, Kt.
Burwari, Govind Roy, Raja
Burke, W. A., M.D.
Burney, Major H.
Burroughs, Sir Wm., Bt.

C

Calder, James
Caldwell, Major H.
Carey, Rev. Dr. W., D.D.
Cautley, Captain P. T.
Chester, G.
Colebrooke, Sir J. E., Bt.
Colebrooke, Major W.
Colebrooke, H. T.
Colvin, A.
Colvin, J. R.
Compton, Sir Herbert
Cooper, H.
Coulthard, Captain T.
Cowles, Captain C.
Crawfurd, J.
Crisp, Captain J.

D

Daniel, Thomas
DeNaye, Dr.
Dillon, Captain P.
Dobbs, A.
Dowdeswell, George
Doyle, Lieut.-Col. C. J.
DuBois, De Beauchesne
Dundonald, Hon'ble Lord
Dwarakanath Tagore

E

East, Sir E. Hyde, Kt.
Edmonstone, N. R.
Egerton, C. C., M. D.
Ellis, Captain E. S.
Erskine, Wm.
Everest, Major G.
Everest, Rev. R.
Ewer, W.

F

Ferguson, J. H.
Fombelle, John
Forbes, Captain W. N.
Francis, R. B.
Franklin, Captain J.
Franks, Hon'ble Sir J.
Fraser, J. B.
Fraser, Captain J.
Fullarton, John, M. D.

G

Gerard, Captain A.
Gilchrist, J. B., L. L. D.
Goldingham, J.
Goodwin, R. T.
Gordon, G. J.
Gordon, Lieut. A. D.
Grant, W. L.
Grey, Hon'ble Sir C. E.

H

Hale, E.
Hall, Captain B.
Halliday, F. J.
Hamilton, Lieut.-Col. Wm.
Hamilton, R. N. C.
Hardwicke, Major-General T.
Hare, D.
Hardy, J.
Harriott, Colonel J. S.
Henderson, Captain H. B.
Herbert, Captain J. D
Hodgson, Lieut.-Col. J. A.
Hodgson, Henry
Hogg, J. W.
Home, B.
Hewison, James
Hunter, J.

J

Jackson, Dr. A. R.
Jenkins, R.

K

Keating, Colonel C. H.
Keene, Henry George
Kelso, Alexander Hamilton
Kedhaway, Sir John B.
Kyd, James

L

Lachlan, Captain R.
Larruleta, M.

Lewin, T.
Linton, Wm.
Lloyd, Chas.
Lloyd, Lieut-Col. Herbert
Low, Captain Jas.
Lumsden, Dr. M., L. L. D.
Lushington, G. T.

M

Macaulay, Col. Colin
Macdonald, Col. Alex.
Macdougall, Capt. J. P.
Mackenzie, Holt
Mackenzie, Capt. J.
Mackillop, G.
Macnaghten, Sir Fras. W., Kt.
Macnaghten, W. H.
Macan, Capt. T.
Malcolm, Major-Genl. Sir J.
Mansell, C. G.
Marsden, Wm.
Marshman, Rev. Dr. Joshua
Marshman, J. C.
Martin, Wm. Byam
Martin, Dr. R. M.
May, J. S.
McWhirter, John, M. D.
Melville, Hon'ble W. H. L.
Mendes, Francis
Metcalfe, Hon'ble Sir C. T., Bt.
Middleton, Nathaniel
Mill, Rev. Prinl. Dr. W. H.
Money, G.
Moore, Major Edward, F. R. S.
Morrison, Captain M.
Mundt, Dr. C.

N

Nicolson, Dr. Simon
Neave, R.

O

Oliver, Wm.
Ouseley, Sir George, Bt.

P

Palmer, John
Parson, Rev. J.
Patterson, Col. Wm.
Pearson, J. Dr.
Pearson, J.
Pemberton, Captain R. B.
Price, Major W.
Prinsep, H. T.
Prinsep, C. R.
Prinsep, James
Proctor, Rev. T.

R

Rajchunder Doss
Ramcomul Sen
Renny, D. H.
Ricketts, Chas. Milner
Roberts, B.
Robertson, Lieut.-Col. Thos.

Robertson, Revd. T.
Robinson, Ven. Archdeacon
Robison, C. K.
Romer, John
Ross, Jas.
Ross, D.
Royle, J. F.
Russell, Sir Henry
Russomoy Dutt
Rutherford, T.
Ryan, Hon'ble Sir E.

S

Schaich, E. W.
Scott, Lieut.-Col. Richard
Sherer, John Walter
Seppings, J. M.
Sibchunder Dos
Smith, A., M. D.
Smith, Courtenay
Smith, R. P.
Stewart, Major S. W.
Stewart, Col. Mathew
Stewart, Hon'ble C. F.
Stewart, Jas.
Stirling, E.
Stirling, Capt.
Strange, Sir Thos.
Strong, F. P.
Sulley, B. C., M. D.
Sutherland, J. C. C.
Swinton, G.
Syamlal Tagore

T

Taylor, Lieut.-Col.
Teignmouth, Right Hon'ble Lord
Thomason, J.
Thompson, John
Thompson, George
Tod, Major Jas.
Trail, Henry
Trant, W. H.
Trotter, Archibald
Trotter, John
Trover, Capt. A.
Tucker, Henry St. George
Turton, T. E. H.
Twining, Wm.
Tytler, J.

W

Walker, Captain W.
Wallich, N., M. D.
Watpole, Major H.
Warren, Lieut.-Col. John
Webb, Major W. S.
White, Major F. S.
Wilcox, Captain R.
Wilkins, Charles
Williams, John Lloyd
Wilson, H. H.
Withers, Rev. G. U.
Wynch, P. M.

Y

Young, James
Young, Revd. Dr. J.

Honorary Members.

Dr. Belanger.
Mons. de Blosseville.
Professor Bopp.
Mons. Burnouf.
Mons. Chezy.
Right Honorable Earl of Munster.
Baron Richmont de Debassayn.
Professor Fischer.
Professor Frœhn.
Henry Sullivan Graeme.
Joseph Von Hammer.
Professor John Jameson.
Mons. Lassen.
Mons. Langbois.
Mons. Du Marcel.
Count de Noe.
Professor Oersted.
Sir Wm. Ouseley.
Sir R. Palmer.
Sir John Phillipart.
Professor Rasmussen.
Mons. Remusat.
Professor A. Schlegel.
Baron Sylvester de Sacy.
Mons. Garcin de Tassy.
General Walker.

THE END.

Printed at the Bengal Military Orphan Press, by G. H. Huttmann.

ERRATA.

Page 318	Line	3 from the bottom,	*for*	Dihong	*read*	Dihing.
„ 319	„	10	„	navigation	„	magnitude.
„ 324	„	5	„	Tezakhana	„	Zezakhana.
„ 324	„	9	„	Tsokak	„	Taokak.
„ 324	Note,	insert a comma after *north bank*, and omit that after *nearest*.				
„ 325	line	19	*for*	time	*read*	line.
„ 331	„	2 from the bottom,	„	the	„	thick.
„ 343	„	1	„	Pasu	„	Pasi.
„ 345	„	8	„	Suhatu	„	Sukatu.
„ 350	„	8	„	Feng ye chou	„	Teng ye chou.
„ 358	„	22	„	Survey	„	Snowy.
„ 364	„	8	„	improving	„	imposing.
„ 364	„	3 from the bottom,	„	area	„	arms.
„ 367	„	10	„	assembly	„	assemblage.
„ 367	„	18	read *far above the level of their bases;* omit the — after *plain.*			
„ 371	„	6	*for*	body	*read*	bed of.
„ 373	„	1	„	carved	„	curved.
„ 376	„	23	„	ultimate	„	alternate.
„ 377	„	1	„	Luri	„	Lung.
„ 378	„	9	„	first	„	one half.
„ 379	„	22	„	having	„	heavy.
„ 382	„	20	„	and receive	„	and that we should follow and receive.
„ 387	„	3 from the bottom,	„	rather	„	though.
„ 391	„	16	„	come	„	con.
„ 391	„	3 from the bottom,	„	houses	„	Harés.
„ 392	Last line,		„	whose	„	where.
„ 393	line	13	„	but it	„	but though it.
„ 394	„	6 from the bottom,	„	Mishmis	„	Miris.
„ 397	„	12	„	elliptics	„	ellipses.
„ 400	last line,		„	morning	„	morang.
„ 402	line	5	„	tribes	„	tales.
„ 403	„	14 and in Note,	„	Sho	„	Lho
„ 405	„	5 from the bottom,	„	and found	„	and we found.
„ 405	„	3 ditto ditto,	„	views	„	news.
„ 406	„	7	„	partiality	„	hostility.
„ 406	„	16	„	and hills	„	of hills.
„ 407	Note		„	a few rods	„	upwards.
„ 409	line	17	„	Dibong	„	Dihong.
„ 409	„	4 from the bottom	„	of moving	„	in moving.
„ 415	„	17	*omit*	of frequent occurrence.		
„ 419	„	4	*for*	twenty-seven	*read.*	27° 29′ 54″.
„ 425	„	11	insert a comma after *fern.*			